Nuclear Waste Disposal Fund

Department of Energy
FY 1998 Budget Request to Congress
(discretionary dollars in thousands)

	FY 1996 Current Appropriation	FY 1996 Comparable Appropriation	FY 1997 Current Appropriation	FY 1997 Comparable Appropriation	FY 1998 Request
Nuclear Waste Fund — Financing					
Nuclear Waste Disposal Fund	151,041	151,067	182,000	182,000	190,000
Defense nuclear waste disposal	248,400	248,400	200,000	200,000	190,000
Total, Nuclear Waste Fund	399,441	399,467	382,000	382,000	380,000
Nuclear Waste Fund — Activities					
Yucca mountain site characterization	250,000	250,000	324,964	324,964	325,000
Waste acceptance, storage and transportation	13,600	13,600	9,936	9,936	9,936
Program Integration	22,105	22,105	17,801	17,801	17,801
Program Direction	28,762	28,762	29,299	29,299	27,263
Subtotal, Nuclear Waste Fund	314,467	314,467	382,000	382,000	380,000
Congressional Reserve[1]	85,000	85,000	——	——	——
Total, Nuclear Waste Fund	399,467	399,467	382,000	382,000	380,000

[1] Reflects appropriations unavailable pending enactment of interim storage authority.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE DISPOSAL FUND

PROPOSED APPROPRIATION LANGUAGE

For nuclear waste disposal activities to carry out the purposes of Public Law 97-425, as amended, including the acquisition of real property or facility construction or expansion, [$182,000,000] *$310,000,000,* **to remain available until expended, to be derived from the Nuclear Waste Fund[:** *Provided,* **That none of the funds provided herein shall be distributed to the State of Nevada or affected units of local government (as defined by Public Law 97- 425) by direct payment, grant, or other means, for financial assistance under section 116 of the Nuclear Waste Policy Act of 1982, as amended:** *Provided further,* **That the foregoing proviso shall not apply to payments in lieu of taxes under section 116(c)(3)(A) of Nuclear Waste Policy Act of 1982, as amended:** *Provided further,* **That no later September 30, 1998, the Secretary shall provide to the President and to the Congress a viability assessment of the Yucca Mountain site. The viability assessment shall include: (1) the preliminary design concept for the critical elements for the repository and waste package; (2) a total system performance assessment, based upon the design concept and the scientific data and analysis available by September 30, 1998, describing the probable behavior of the repository in the Yucca Mountain geological setting relative to the overall system performance standards; (3) a plan and cost estimate for the remaining work required to complete a license application; and (4) an estimate of the costs to construct and operate the repository in accordance with the design concept[:** **which not to exceed $4,875,000 may be provided to the State of Nevada, solely to conduct scientific oversight responsibilities pursuant to the Nuclear Waste Policy Act of 1982, (Public Law 97-425), as amended; and of which not to exceed $6,175,000 may be provided to affected local governments, as defined in Public Law 97-425, to conduct appropriate activities pursuant to the Act:** *Provided further,* **That the distribution of the funds to the units of local government shall be determined by the Department of Energy:** *Provided further,* **That the funds shall be made available to the State and units of local government by direct payment:** *Provided further,* **That within ninety days of the completion of each Federal fiscal year, each State or local entity shall provide certification to the Department of Energy, that all funds expended from such payments have been expended for activities as defined in Public Law 97-425. Failure to provide such certification shall cause such entity to be prohibited from any further funding provided for similar activities:** *Provided further,* **That none of the funds herein appropriated may be: (1) used directly or indirectly to influence legislative action on any matter pending before Congress or a State legislature or for lobbying activity as provided in 18 U.S.C. 1913; (2) used for litigation expenses; or (3) used to support multistate efforts or other coalition building activities inconsistent with the restrictions contained in this Act.** *(Energy and Water Development Appropriations Act, 1997.)*

EXPLANATION OF CHANGES

In accordance with the direction contained in Energy and Water Appropriation Act for fiscal year 1997, no funds were provided to the State of Nevada or affected units of local government to conduct scientific oversight activities as described by the Nuclear Waste Policy Act of 1982, (Public Law 97-425), as amended. The fiscal year 1998 proposed Appropriation language requests that funding be provided, as envisioned by Section 116(c) of that Act, to the State of Nevada and affected units of local government affected by site characterization activities to enable local governments and the citizens most directly impacted by the Yucca Mountain Project to remain informed and to participate in a meaningful way in the day to day program actions.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
ENERGY AND WATER DEVELOPMENT
(Tabular dollars in thousands, Narrative in whole dollars)

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
EXECUTIVE BUDGET SUMMARY

MISSION

The mission of the Office of Civilian Radioactive Waste Management (OCRWM) is to manage and dispose of the Nation's spent nuclear fuel and high-level radioactive waste. The office provides leadership in developing and implementing strategies to accomplish this mission that assure public and worker health and safety, protect the environment, merit public confidence, and are economically viable.

The Nuclear Waste Policy Act of 1982 established the Federal Government's responsibility to provide for the permanent disposal of the Nation's high-level radioactive waste and spent nuclear fuel, and directed that the generators and owners of these wastes be responsible for the costs of their management and disposal. The Act authorizes the Department of Energy to develop a system to safely manage and permanently dispose of the spent nuclear fuel accumulating at commercial reactors. The primary goal of the Act is the siting, construction, and operation of a mined geologic repository. As originally enacted, the Act also directed the Department to study the need for and feasibility of a monitored retrievable storage facility. Additionally, as a result of a 1985 Presidential determination, the Department was to proceed with plans and actions to dispose of defense waste together with commercial spent nuclear fuel.

The Act directed the Department of Energy to undertake a national screening process for candidate repository sites. In 1986, the Department recommended three sites to the President for further study as possible geologic repositories. In the Nuclear Waste Policy Amendments Act of 1987, the Congress redirected the Department to investigate only one potential repository site, at Yucca Mountain, Nevada, and to report on the need for a second repository between 2007 and 2010. The Amendments Act also imposed conditions that restricted the Department's ability to site and develop a storage facility.

STRATEGY

In 1997 Congress Appropriated $382 million to OCRWM (see MAJOR CHANGES section for details). The Conference Report to the 1997 Energy and Water Appropriations includes language that stated FY 1997 appropriated funds be used in accordance with the Office of Civilian Radioactive Waste Management's revised draft Program Plan. The revised draft Program Plan is based upon the knowledge we have gained through scientific investigations of the Yucca Mountain site and engineering design activities, as well as the efforts currently underway to streamline the technical and regulatory elements of site characterization program. The revised Program Plan defines three near-term objectives that will maintain the momentum toward a national decision on the geologic disposal option: 1) Update the regulatory framework in FY 1997 for evaluating the suitability of Yucca Mountain; 2) Complete the Viability Assessment of the Yucca Mountain site in FY 1998; 3) Recommend the repository site to the President in 2001 if the site is suitable, and submit a license application to the Nuclear Regulatory Commission in 2002. To meet these new Program objectives, two Business Centers and a Management Center have been established. The largest portion of the Program's funding is concentrated in the Business Centers which consist of the Yucca Mountain Site Characterization Project and the Waste Acceptance, Storage, and Transportation Project.

The OCRWM's FY 1998 budget request of $380 million reflects the objectives of the Program Plan. Accordingly, our FY 1998 budget request includes $325 million for the Yucca Mountain Site Characterization Project, $9.9 million for the Waste Acceptance, Storage, and Transportation Project and $45.1 million for management functions.

Civilian Radioactive Waste Management Program
Funding Requirements

	FY 1996 As Enacted	FY 1997 As Enacted	FY 1998 Request	FY 1999 Request	FY 2000 Request
Yucca Mountain Site Characterization	250	325	325	300	300
Waste Acceptance, Storage and Transportation	14	10	10	35	35
Program Management Center	50	47	45	45	45
PROGRAM TOTAL AVAILABLE	**314**	**382**	**380**	**380**	**380**
Congressional Reserve*	85				
NET APPROPRIATIONS	**399**	**382**	**380**	**380**	**380 ****

*** This budget assumes that the $85M reserved in the FY 1996 Defense Waste Appropriation will be released in FY 1999 for wast acceptance and transportation services activities.**

**** The outyear funding for this account for fiscal years 2000-2002 does not reflect the impact of the 1998 viability assessment of Yucca Mountain.**

Business and Management Centers

Business Center - Yucca Mountain Site Characterization Project

The strategy for the Yucca Mountain Site Characterization Project has been revised to identify, prioritize, and schedule a set of site characterization activities that will allow us to maintain our long-term objective of starting repository operations in 2010. Based on the knowledge we have gained through scientific investigations and engineering design activities conducted to date, as well as streamlining and focusing both technical and regulatory elements of site characterization program, we have defined three near-term objectives: complete an update to our regulatory framework in 1997; complete a Viability Assessment in 1998; recommend the repository site to the President in 2001 if warranted and submit a license application to the Nuclear Regulatory Commission in 2002.

Completion of the Viability Assessment of the Yucca Mountain site by September 30, 1998 is central to meeting the new goals for the Program. This assessment consists of repository and waste package designs; an evaluation of the probable performance of the system of natural and engineered barriers; a plan and cost estimate to complete the additional technical work needed to prepare a license application; and an estimate of the costs to construct and operate a repository using these designs.

These components, collectively, will provide a better understanding of the repository design and its performance in the geologic setting, a better appreciation of the remaining work needed to prepare a license application, and a more precise estimate of the cost of a repository. The completion of these components will constitute a logical convergence point at which a measurably improved appraisal can be made of the prospects for geologic disposal at the Yucca Mountain site and provide the information to the Administration and the Congress. The Program has prioritized and integrated its science, engineering, and management activities to support completion of these components in 1998. To support this objective, we plan to complete the excavation of the Exploratory Studies Facility main tunnel in 1997.

The preliminary steps taken by the program to prepare for the Viability Assessment provides us with a high degree of confidence that we will successfully complete the Viability Assessment on schedule. However, as the Program makes advances in scientific research and gathers new data, it is likely that new or different types of research will have to be initiated to resolve scientific uncertainties to complete the Viability Assessment. These types of changes could include such items as additional underground exploration or drilling. To ensure that any such evolving requirements do not impede the success of completing the Viability Assessment, the Program must have the flexibility to redirect resources from long range items, such as license application activities or characterization activities, to efforts directly supporting the Viability Assessment.

The Viability Assessment is a programmatic management tool that represents an early and integral step on the path needed for a Site Suitability decision in 2001. Based upon the decade or more of data gathering, analysis and conceptualization that have already been done, and by placing emphasis upon the most significant remaining issues, by September 1998, the Viability Assessment will contain a comprehensive description of the design and operational concept for the repository. It will also include an assessment of the repository performance, a cost estimate and a plan for completing the license application. It will assist us to focus the final years of the site investigation and facility design on the important uncompleted work and unresolved issues that must be addressed prior to a site recommendation by the Secretary in 2001. We will not be finished with our evaluation of the site in 1998, and the Secretary will not be in a position to make a positive site recommendation; however, the Viability Assessment will give all participants a better comprehension of the repository venture and the significance of the available data. It also will give policy makers information about the probability that a repository is a viable undertaking.

Following the completion of the Viability Assessment in 1998, we will complete the activities described in a license application pla

developedas part of the Viability Assessment. A Project Integrated Safety Assessment will be prepared in 1999 and submitted to th Nuclear Regulatory Commission for prelinary comments on its sufficiency for licensing. We will issue the Draft Environmental Impact Statement for public review and comment 1999 and issue the Final Environmental Impact Statement and Record of Decision in 2000. If the site is found suitable, the Secary will issue a site recommendation in 2001. Prior to making a decision on site recommendation, we will announce a schedule for public hearings in the vicinity of Yucca Mountain on the possible recommendation. After the hearings and prior to recommending the site to the President, we will notify the State of Nevada about the decision to recommend the site. If the site is approved, we will submit a license application for construction authorization to the Commission in 2002.

Yucca Mountain Site Characterization Project
Funding Requirements

Business Center - Waste Acceptance, Storage and Transportation Project

Program Activity	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
YMSCO					
Operations/Construction	85	91	69	65	36
Core Science	54	73	87	69	58
Design & Engineering	35	77	75	69	99
Performance Assessment	12	21	20	16	16
Licensing/Suitability	0	2	4	5	14
NEPA	0	5	6	14	15
Project Management	64	49	46	46	46
External Oversight & PETT	0	7	18	16	16
TOTAL YMSCO	**250**	**325**	**325**	**300**	**300**

The Fiscal Year 1997 Appropriations provided funds to carry out the legal responsibilities of the Waste Acceptance, Storage, an Transportation Project, such as maintaining the standard disposal contract with the nuclear utilities and processing delivery commitment schedules and the commercial SNF inventory data base, and enabled the Program to perform contingency planning to maintain the ability to respond rapidly should the Administration and the Congress agree on new policy direction for interim storage.

The Program will maintain a core capability in this Project to lay the groundwork for new policy direction regarding interim storage upon completion of the viability assessment. This assumption reflects the Administration's position that the interim storage facility sitin decision should be informed by the results of the Yucca Mountain Viability Assessment to be completed in 1998. The Program is assuming the release of $85 million appropriated in FY 1996 to be available in FY 1999. These funds would enable the program to continue procurement initiative for transportation equipment and services (discussed below); and to carry out other phases of interim storag activities that are deemed by policy to be appropriate. Some activities can be conducted prior to designation of an interim storage facility site, that could expedite the start of interim storage operations when a site is designated and the facility authorized. These activitie include the development of a market-driven approach that relies on the private sector for waste acceptance, storage, and transportation

services; and the conduct of design, engineering and safety analyses for a non-site specific, phased, interim storage facility. Work to be accomplished after a site is designated includes design and facility development and the acquisition of waste acceptance, storage, and transportation equipment and services from the private sector.

The market-driven approach will allow for the maximum use of private industry capabilities, expertise, and experience in accepting, transporting, and storing commercial spent nuclear fuel. A competitive procurement process is under development for a fixed-price, multi-year, performance-based contracts to obtain needed services using privately-owned equipment at a reasonable cost. Incentives and flexibility will be offered to encourage innovative private sector approaches. Under this approach, private industry will act for the Department in carrying out certain functions under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR Part 961) to accept spent nuclear fuel at utility sites for delivery to a Federal facility.

Waste Acceptance, Storage and Transportation Project
Funding Requirements *

Program Activity	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
WAST					
Spent Fuel Storage	1	2	2	12	12
Transportation	5	6	6	20	20
Waste Acceptance	2	1	1	2	2
MPC Subsystem	2	0	0	0	0
Project Integration	4	1	1	1	1
**TOTAL WAST ** **	**14**	**10**	**10**	**35**	**35 ****

***This budget request assumes that the $85M reserved in the FY 1996 Defense Waste Appropriation will be released in FY 1999 for waste acceptance and transportation services activities.**

****The outyear funding for this account for fiscal years 2000-2002 does not reflect the impact of the 1998 viability assessment of Yucca Mountain.**

Management Center

The three areas within the Management Center include: Program Management and Integration, Quality Assurance, and nHuma Resources and Administration. The Management Center provides continued administrative support and strategic planning assistance to the Yucca Mountain Site Characterization Project and the Waste Acceptance, Storage, and Transportation Project as the revised Program Plan stipulates. It addresses the crosscutting issues affecting both the Business and Management Centers and supports the Director's office in overall management and representation of the Program and in development of program policies and strategic plans. Efforts are concentrated on improving and updating management systems to ensure the efficient application of reduced funding levels to program priorities. Emphasis continues to be placed on increasing the ability of the Federal management staff to carry out its responsibilities with reduced contractor support.

Management Center
Funding Requirements

Program Activity	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
Program Management & Integration					
Quality Assurance	5	2	2	2	2
Program Management	7	6	6	6	6
Human Resources Management	10	10	10	10	10
Program Mgt. & Int Subtotal:	22	18	18	18	18
Program Direction	28	29	27	27	27
Program Management & Integration Total	**50**	**47**	**45**	**45**	**45**

MAJOR CHANGES

Congressional Redirection

The Energy and Water Development Appropriations Act of 1996 provided a total of $400 million for the Program, $85 million of which was designated to be used only for the development of an interim storage facility and only upon enactment of new statutory authority. Pending such authority, the Program was effectively reduced to a $315 million funding level, or one-half of the $630 million funding level anticipated for the continuation of the 1994 program approach. In addition, Congress mandated a program redirection. The program structure was significantly revised in the FY 1997 budget request to reflect the Congressional program redirection. In FY 1997, Congress appropriated $382 million, $18 million below the Administration's request, and directed the program to apply the reduction by providing no funding for technical oversight to the State of Nevada and affected units of local government, and by reducing budget elements related to general and project management costs not directly associated with the performance of characterization and interim storage activities. The program is complying with this direction by adhering to the guidance concerning the State of Nevada and affected units of local government, and by realigning its organizational structure to reduce management and operating costs.

Strategic Alignment Initiative

The Secretary's Strategic Alignment Initiative (SAI) established targets for reducing the number of Federal Full Time Equivalent Employees (FTEs) employed by the Department. To comply with the SAI, OCRWM flattened the organizational structure to: improve the employee to supervisor ratio; place authority at organizational levels where actual work tasks are to be managed; eliminate middle management positions; and transfer full-time equivalent positions from headquarters in Washington D.C. to the Yucca Mountain Project. The staffing profile which reflects the SAI is as follows:

FEDERAL STAFFING PROFILES

PROGRAM DIRECTION:	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
FIELD:					
Idaho	5	0	0	0	0
Richland	1	1	1	1	0
Nevada	4	4	4	4	4
Oak Ridge	1	0	0	0	0
Subtotal	11	5	5	5	4
DOE MATRIX:	16	18	16	14	13
HEADQUARTERS - OCRWM:					
Washington D.C.	110	103	86	74	71
Yucca Mtn Project Ofc Nevada	111	106	99	97	94
Subtotal	221	209	185	171	165
GRAND TOTAL	248	232	206	190	182

CONTRACTOR STAFFING PROFILE

Field Offices/Sites	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
Albuquerque Operations Office					
Los Alamos National Laboratory	46.6	68.8	68.8	68.8	68.8
Sandia National Laboratory	27.4	38.1	38.1	38.1	38.1
SUBTOTAL, AL	74.0	106.9	106.9	106.9	106.9
Chicago Operations Office					
Argonne National Laboratory (East)	0.2	1.0	1.0	1.0	1.0
SUBTOTAL, CH	0.2	1.0	1.0	1.0	1.0
Idaho Operations Office					
Idaho National Engineering Laboratory	8.4	6.2	6.2	6.2	6.2
SUBTOTAL, ID	8.4	6.2	6.2	6.2	6.2
Oakland Operations Office					
Lawrence Berkeley National Laboratory	28.1	34.0	34.0	34.0	34.0
Lawrence Livermore National Laboratory	38.1	68.8	68.8	68.8	68.8
SUBTOTAL, OAK	66.2	102.8	102.8	102.8	102.8
Oak Ridge Operations Office					
Oak Ridge Institute for Science & Education (ORISE)	1.4	1.4	1.4	1.4	1.4
Oak Ridge National Laboratory	0.3	0.5	0.5	0.5	0.5
SUBTOTAL, OR	1.7	1.9	1.9	1.9	1.9
Richland Operations Office					
Pacific Northwest National Laboratory	0.5	0.5	0.5	0.5	0.5
SUBTOTAL, RL	0.5	0.5	0.5	0.5	0.5
TOTAL: Field Offices/Sites	150.9	219.3	219.3	219.3	219.3
Headquarters					
Washington D.C.	293.5	251.0	251.0	251.0 a	251.0
Nevada, YMP	1,441.6	1,396.0	1,396.0	1,396.0	1,396.0
TOTAL: Headquarters	1,735.1	1,647.1	1,647.1	1,647.1	1,647.1
TOTAL: combined Headquarters & Field Offices/Sites	1,886.0	1,866.3	1,866.3	1,866.3	1,866.3

Notes:

a) - Staffing level does not reflect the impacts of a contract for transport cask and storage module production, and waste acceptance and transportation which is assumed to be awarded in FY 1999.

PERFORMANCE MEASURES

Commitment **:**
Complete by September 30, 1998 an assessment of the viability of licensing and constructing a geologic repository at the Yucca Mountain site.

Description:
Viability Assessment of the Yucca Mountain site will be completed in FY 1998. As directed by PL 104-206, the Viability Assessment will consist of the following four components:

- **the preliminary design concept for the critical elements for the repository and waste package;**
- **a total system performance assessment, based upon the design concept and the scientific data and analysis available by September 30, 1998, describing the probable behavior of the repository in the Yucca Mountain geological setting relative to the overall systems performance standards;**
- **a plan and cost estimate for the remaining work required to complete a license application; and**
- **an estimate of the costs to construct and operate the repository in accordance with the design concept.**

These components, collectively, will provide a better understanding of the repository design and its performance in the geologic setting, a better appreciation of the remaining work needed to prepare a license application and a more precise estimate of the cost of a repository.

Units of measure:
Actual performance will be measured against this commitment by determining how many of the four components of the assessment are completed and issued by September 30, 1998.

Target performance level:
The Program will strive to complete all components of the assessment by September 30, 1998.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
PROGRAM FUNDING PROFILE
(Tabular dollars in thousands)

PROGRAM ELEMENT	FY 1996 Enacted Appropriation	FY 1997 Enacted Appropriation	FY 1998 Budget Request	FY 1999 Budget Request	FY 2000 Budget Request
YUCCA MOUNTAIN SITE CHARACTERIZATION	$ 250,000	324,964	$ 325,000	$ 300,000	$ 300,000
WASTE ACCEPTANCE, STORAGE AND TRANSPORTATION	13,600	9,936	9,936	35,000	35,000
PROGRAM INTEGRATION:					
Quality Assurance	5,147	1,710	1,710	1,710	1,710
Program Management	7,458	6,161	6,161	6,161	6,161
Human Resources & Administration	9,500	9,930	9,930	9,866	9,866
Total Program Integration	22,105	17,801	17,801	17,737	17,737
PROGRAM DIRECTION	28,762	29,299	27,263	27,263	27,263
CONGRESSIONAL RESERVE a/	$ 85,000 a/	--	$ --	$ -- a/	--
TOTAL PROGRAM	$ 399,467	$ 382,000	$ 380,000	$ 380,000	380,000
FUNDING:					
Nuclear Waste Disposal Fund	151,067	182,000	190,000	190,000	190,000
Defense Nuclear Waste Disposal Appropriation	248,400 a/	200,000	190,000	190,000	190,000
TOTAL PROGRAM FUNDING	$ 399,467	$ 382,000	$ 380,000	$ 380,000	380,000 b/
STAFFING (FTE's):					
HQ FTE's (Washington and Nevada)	221	209	185	171	165
Field and DOE Matrix Support FTE's	27	23	21	19	17
TOTAL FTE's	248	232	206	190	182

Authorizations: P.L. 97-425, "Nuclear Waste Policy Act" (1982); P.L. 100-203, "Nuclear Waste Policy Amendments Act" (1987)

a/ The FY 1996 Energy and Water Development Appropriation Act reserved $85M in the Defense Nuclear Waste Disposal Appropriation which shall be available for obligation and expenditure only for an interim storage facility and only upon the enactment of specific statutory authority. The funding profile assumes that the $85 million, appropriated by that Act, will be released for additional waste acceptance and transportation activities in FY 1999.

b/ The outyear funding for this account for fiscal years 2000-2002 does not reflect the impact of the 1998 viability assessment of Yucca Mountain.

FY 1998 CONGRESSIONAL BUDGET REQUEST
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
PROJECTED RECEIPTS AND FUNDING BY FISCAL YEAR
(Dollars in thousands)

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
One mill/kWh Fee 1/.....	632,341	648,700	655,400	657,400	658,900
Fee Credits 2/.....	--	--	--	--	--
One-time Fee.....	1,300	0	0	0	0
Subtotal.....	633,641	648,700	655,400	657,400	658,900
Investment 3/.....	208,000	322,000	377,000	435,000	497,000
Subtotal.....	841,641	970,700	1,032,400	1,092,400	1,155,900
Less: Unrealized Discount....	--	--	--	--	--
Total Income.....	841,641	970,700	1,032,400	1,092,400	1,155,900
Program Funding:					
Nuclear Waste Disposal Fund	151,067	182,000	190,000	190,000	190,000
Defense Nuclear Waste Appropriation	248,400 4/	200,000	190,000	190,000 4/	190,000
Total, Program Funding	399,467	382,000	380,000	380,000	380,000

1/ Based on Nov. 21, 1996, EIA forecast memo to OCRWM.

2/ Result of Consolidated Edison v. DOE, decided March 17, 1989.

3/ Represents net earnings on investments available for appropriation.

4/ The FY 1996 Energy and Water Development Appropriation Act reserved $85M in the Defense Nuclear Waste Disposal Appropriation which shall be available for obligation and expenditure only for an interim storage facility and only upon the enactment of specific statutory authority. The funding profile assumes that the $85 million will be released for additional waste acceptance and transportation activities in FY 1999.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET SUBMISSION
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
(Tabular dollars in thousands)
PROGRAM FUNDING BY SITE

LABORATORY/PLANT/INSTALLATION	FY 1996 Enacted Appropriation	FY 1997 Enacted Appropriation	FY 1998 Budget Request	FY 1999 Budget Request	FY 2000 Budget Request
Congressional Reserve a/	$ 85,000 a/	$ 0	$	$ 0	$ 0
Argonne National Laboratory	450	496	516	537	558
Chicago Operations Office	50	50	52	54	56
Idaho National Engineering	668	0	0	0	0
Lawrence Berkeley Lab	3,105	4,300	4,000	2,000	1,000
Lawrence Livermore National Lab	8,886	12,311	12,000	5,000	3,000
Los Alamos National Lab	9,822	13,609	10,000	5,000	3,000
Nevada Operations Office b/	44,867	51,869	41,580	40,526	41,186
Nevada Test Site	7,000	9,700	8,000	8,000	8,000
Nevada (Yucca Mountain Project Office) c/	172,544	226,861	244,352	239,530	244,999
Oak Ridge Institute for Science and Education	25	26	27	28	29
Oak Ridge National Laboratory	0	0	0	0	0
Oak Ridge Operations Office	326	264	263	273	284
Pacific Northwest Laboratory	65	100	160	160	160
Richland Operations Office	85	87	89	92	96
Sandia National Laboratories	6,624	9,176	8,000	3,000	2,000
Washington Headquarters	59,950	53,151	50,961	75,800	75,632
TOTAL PROGRAM	$ 399,467 a/	$ 382,000	$ 380,000	$ 380,000	$ 380,000

a/ The FY 1996 Energy and Water Development Appropriation Act reserved $85M in the Defense Nuclear Waste Disposal App which shall be available for obligation and expenditure only for an interim storage facility and only upon the enactment of specific statutory authority.

b/ Includes Financial Assistance to the State of Nevada, and Affected Units of Local Government and includes funding for contracts administered in Nevada (i.e. USGS, National Academy of Science, Universities, etc.)

c/ Includes funding disbursed to Nevada through a Headquarters administered contract (Management and Operating contract Services contracts, etc.)

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(Dollars in thousands)

YUCCA MOUNTAIN SITE CHARACTERIZATION

I. Mission Supporting Goals and Objectives

The mission of the Yucca Mountain Site Characterization Program (YMP) Element is to determine the suitability of the site to become a deep geologic repository for the nation's spent nuclear fuel and high-level nuclear waste; complete activities for site recommendation to the President; and License Application submittal to the NRC, and prepare the accompanying Environmental Impact Statement (EIS).

The FY 1997 Conference Report includes language that directed FY 1997 appropriated funds be used in accordance with the revised Program Plan. The YMP is striving to reach the earliest possible conclusion to site investigations and we have concentrated our resources on the most significant outstanding technical issues first. In FY 1998, we will assemble the information available to date into a Viability Assessment.

A Viability Assessment of the Yucca Mountain site will be completed in FY 1998. As directed by PL 104-206, the Viability Assessment will consist of the following four components:

- **the preliminary design concept for the critical elements for the repository and waste package;**
- **a total system performance assessment, based upon the design concept and the scientific data and analysis available by September 30, 1998, describing the probable behavior of the repository in the Yucca Mountain geological setting relative to the overall systems performance standards;**
- **a plan and cost estimate for the remaining work required to complete a license application; and**
- **an estimate of the costs to construct and operate the repository in accordance with the design concept.**

The Viability Assessment is a programmatic management tool that represents an early and integral step on the path needed for a Site Suitability decision in 2001. Based upon the decade or more of data gathering, analysis and conceptualization that have already been done, and by placing emphasis upon the most significant remaining issues, by September 1998, the Viability Assessment will contain a comprehensive description of the design and operational concept for the repository. It will also include an assessment of the repository performance, a cost estimate and a plan for completing the license application. It will assist us to focus the final years of the site investigation and facility design on the important uncompleted work and unresolved issues that must be addressed prior to a site recommendation by the Secretary in 2001. We will not be finished with our evaluation of the site in 1998, and the Secretary will not be in a position to make a positive site recommendation; however, the Viability Assessment will give all participants a better comprehension of the repository venture and the significance of the available data. It also will give policy makers information about the probability that a repository is a viable undertaking.

The first component of the viability assessment focuses on the repository and waste package design. This component will address those design elements that are critical to determining the feasibility and performance of the repository and the engineered barrier system. The effort will evaluate the technological feasibility of the designs but will not yet contain the detail needed for licensing. The designs will build on our existing design work documented in the 1996 *Mined Geologic Disposal System Advanced Conceptual Design Report*, **with emphasis placed on the key technical questions that affect waste containment and isolation, performance, and cost. These questions revolve around thermal management of the waste-generated heat, corrosion of waste packages, the role of supplemental engineered barriers, and transport of radioactive wastes. In addition, the effort will address concepts for waste retrieval operations, performance confirmation requirements, safety systems, and other factors that significantly affect repository costs. The completion of these components constitute a logical convergence at which the program can make a measurably improved appraisal of the prospects for geologic disposal at the Yucca Mountain site. This component is supported by the Design and Engineering function defined below.**

The second component of the viability assessment will focus on the total system performance assessment. The outcome of this component will be an updated total system performance assessment based on our design concepts and the analyses of available site and engineering data. The primary objective of the total system performance assessment is to evaluate the probable behavior of the potential repository. An additional objective is to further refine our evaluations of repository performance under a range of normal conditions and under conditions imposed by potentially disruptive events, such as earthquakes and volcanism. The performance assessment will also evaluate the possible range of performance caused by uncertainty in predicting key factors such as ground-water flow, thermal effects, and corrosion. This component is supported by the Performance Assessment and Core Science functions, defined below.

The third component of the viability assessment focuses on a plan and cost estimate for the remaining work required to complete the license application plan. This component will identify the remaining scientific investigations and engineering information needed to complete a license application. Our long-term goal of submitting a docketable license application to the Nuclear Regulatory Commission, should the Yucca Mountain site be found suitable, remains central to the Program's mission. The preparation of the license application plan will also provide an opportunity to assess the adequacy of our revised approach to site characterization and design and the effectiveness of updates to the Program's regulatory framework. This component is supported by the Licensing function below.

The fourth component of the viability assessment is the repository cost and schedule estimates. This component will address the cost and schedule to complete site characterization; performance confirmation; and construction, operation, and closure of a potential repository at Yucca Mountain. The life-cycle cost and schedule estimates will provide information for policy decisions regarding the feasibility and rationale for continuing with licensing and construction of a geologic repository.

The cost estimates will be based on the repository and waste package designs, and scientific testing completed in 1998. We will use some design assumptions to augment the completed designs. To reduce the uncertainties inherent in such assumptions, design activities will place an emphasis on defining repository and engineered barrier system concepts and components that significantly affect costs. This component is supported by the Design and Engineering and Project Management functions defined below.

The completion of these components constitutes a logical convergence at which the program can make a measurably improved appraisal of the prospects for geologic disposal at the Yucca Mountain site.

To support Viability Assessment, we have focused, streamlined, prioritized, and integrated our science, engineering, and management activities. We plan to complete excavation of the Exploratory Studies Facility (ESF) five mile loop in FY 1997. This excavation will allow underground testing to collect key scientific and engineering data at the potential repository level.

The preliminary steps taken by the program to prepare for the Viability Assessment provides us with a high degree of confidence that we will successfully complete the Viability Assessment on schedule. However, as the Program makes advances in scientific research and gathers new data, it is likely that new or different types of research will have to be initiated to reduce scientific uncertainties and complete the Viability Assessment. These types of changes could include such items as additional underground exploration, or drilling. To ensure that any such evolving requirements do not impede the success of completing the Viability Assessment, the Program must have the flexibility to redirect resources from long range items, such as license application activities or characterization activities, to efforts directly supporting the Viability Assessment.

The Element functions are: Operations/Construction, Core Science, Design and Engineering, Performance Assessment, Licensing/Suitability, National Environmental Policy Act (NEPA), Project Management, and External Oversight. The scope of these functions is described below.

<u>Operations/Construction:</u>

Operations and Construction includes coordination, planning, operation, and maintenance of the tunnel boring machine (TBM); construction of alcoves for scientific testing; instrumentation installation, operations and maintenance to acquire test data necessary for the Viability Assessment, and surface and subsurface facilities related to the ESF and the drilling program. Also included is the safety and health program, which provides for the protection of employees, members of the public, and the environment; and field support services procured from the Nevada Test Site.

<u>Core Science:</u>

Core Science is comprised of scientific or site characterization data collection from surface, subsurface, and laboratory efforts; environmental data collection, monitoring, and requirements compliance; site and materials performance testing; scientific test planning and design; modeling and data and hypothesis analysis; input to and development of the Program Element technical data bases; completion of models and synthesis reports that serve as the basis for the geologic and hydrologic descriptions used in the Viability Assessment and future site recommendation, NEPA and licensing documentation.

<u>Design and Engineering:</u>

Design and Engineering includes coordination and planning of waste package and repository surface and subsurface and the balance of ESF design; preparation and maintenance of design requirements documents and design control; integration and review; trade studies and cost estimates; performance testing; modeling programs for waste forms and waste packages. Also

included are the optimization of repository design issues; site transportation requirements and preparation and development of repository and waste package input to the TSLCC, Viability Assessment, site recommendation, NEPA and licensing documentation.

Performance Assessment:

Performance Assessment includes calculations and modeling efforts associated with total system and subsystem performance analysis, for both repository preclosure and postclosure periods. Performance Assessment produces evaluations of repository system behavior based on calculations and numeric modeling of physical processes and parameters affecting potential migration of radionuclides through the geosphere. Performance Assessment quantitatively evaluates the ability of natural and engineered barrier systems to meet preclosure and postclosure performance objectives. Included is management and control of supporting technical databases and coordination and planning for Viability Assessment. Also included are interactions with the NRC, Nuclear Waste Technical Review Board (NWTRB), and other oversight groups.

Licensing/Suitability:

The objective of the licensing program is to prepare a License Application for submittal to the NRC. The content and quality of the License Application information should be such that the NRC would accept it for docketing upon submittal and be able to grant a construction authorization after the three-year review period mandated by the Nuclear Waste Policy Act, As Amended (NWPAA).

The overall objective of the suitability program is to conduct site studies and perform analyses and evaluations necessary to enable the Director to develop a site recommendation.

NEPA:

NEPA compliance activities include the conduct of scoping meetings; reviewing and responding to public scoping comments; data gathering and impact analyses and consultations with other agencies and Native American Indian tribes all of which will lead to development and issuance of a Draft Environmental Impact Statement (DEIS) for public comment. A final EIS as well as a Record of Decision will be developed following the public comment period. The DEIS will be issued in FY 1999 and the EIS will be issued in FY 2000. NEPA data needs will be integrated with data from Core Science, Performance Assessment, Licensing and Suitability.

Project Management:

Project Management includes planning, budgeting, scheduling and funds management of all Program Element activities, facilities, site security, administrative support services, telecommunications and rents; records management and computer procurement, maintenance and operation of wide area and local area networks; motor pool operations; and conduct of a public information and outreach program. The major components of these activities are: management and integration functions for all approved work; Program Element control performance measurement system; technical Program Element management

staff; and cost and schedule baseline management.

External Oversight and Payments Equal To Taxes (PETT):

External Oversight consists of support for technical oversight by the State of Nevada and Affected Units of Local Government, and Payments Equal To Taxes.

II. Funding Schedule

Program Activity	FY 1996	FY 1997	FY 1998	$ Change	% Change	FY 1999	FY 2000
YMSCO							
Operations/Construction	84,719	90,611	68,500	(22,111)	-24%	65,000	35,900
Core Science	53,667	73,076	87,000	13,924	19%	69,000	58,200
Design & Engineering	35,236	77,328	74,878	(2,450)	-3%	69,000	99,400
Performance Assessment	12,144	20,763	20,000	(763)	-4%	16,000	16,400
Licensing/Suitability	0	2,420	4,000	1,580	65%	5,000	13,800
NEPA	0	5,250	6,000	750	14%	14,000	14,500
Project Management	64,234	48,516	46,500	(2,016)	-4%	46,200	46,000
External Oversight & PETT *	0 *	7,000	18,122 **	11,122	159%	15,800 **	15,800 **
TOTAL YMSCO	250,000	324,964	325,000	36	0%	300,000	300,000

NOTE: (1) Partial funding for the Quality Assurance (QA) program is included in the Design and Engineering program activity. The supporting QA narrative is located in the Program Integration section.

* In FY 1996, PETT was in Program Management
** FY 1998 PETT $6.9M; FY 1999 PETT $5.6M; FY 2000 PETT $5.6M

III. Performance Summary

FY 1996 Accomplishments

Operations/Construction (FY 1996): FY 1996 $84,719

- Excavated the ESF five mile loop with the TBM southward, through the entire repository horizon. The loop will be completed in FY 1997. Initiated excavation of the Ghost Dance fault test drifts, scheduled for completion in FY 1997. Excavated an alcove for conducting heater tests to determine thermal characteristics of the host rock, and excavated alcove #4.

- **Ensured the protection of employees, members of the public, environment, and Program Element facilities and equipment from hazards that may result from site characterization and construction activities. These activities will continue through FY 2000.**

- **Provided ESF underground safety support and on-site safety support to construction and operations; provided environmental support for operating hazardous waste accumulation facilities, managing hydrocarbon contaminated soil maintenance and disposal; and conducted surveillance of site activities to ensure compliance with environmental regulations and requirements.**

- **Maintained medical emergency services and fire prevention programs to support field activities. Maintained implementation of a safety and health program complying with applicable requirements. Continued implementation of the emergency management program.**

Core Science (FY 1996): **FY 1996**
$53,667

- **Completed initial testing in ESF alcove 2 (Bow Ridge fault); installed equipment and initiated testing in alcove 3 (upper contact PTn) and alcove 4 (lower contact PTn); continued unsaturated zone testing and monitoring in surface boreholes along the ESF main drift and north ramp. This data provided important inputs and constraints on site scale flow and transport models of the unsaturated zone.**

- **Completed processing and analysis of surface geophysics data at the site and in Crater Flat. Completed surface geologic mapping of the potential repository area. These data will be incorporated in an updated version of the 3-D Geologic Framework Model in FY 1997.**

- **Completed conservative tracer tests at C-wells to provide data that will be used to validate saturated zone flow and transport models.**

- **Initiated the single heater test. The test will include a nine month heat-up phase and a nine-month controlled cool-down. Data will be used to develop coupled process models of the near field environment.**

- **Continued Environmental Safety and Health (ES&H) compliance activities including air quality and meteorology, water resources, archeological, radiological, ecosystems and socioeconomic monitoring; maintained and acquired requisite permits so that uninterrupted site activities may continue; and conducted surveillance, audits and assessments of site activities to ensure regulatory compliance.**

- **Conducted scientific and engineering reviews of hazardous and solid waste handling and ESF facility designs to ensure compliance with environmental regulations and requirements.**
- **Performed preconstruction surveys to identify and characterize biological and cultural resources on lands proposed for surface-disturbing activities; performed interim and final reclamation activities as appropriate.**

- **Prepared data synthesis reports for radiological and terrestrial ecosystems field monitoring.**

Design and Engineering (FY 1996): **FY 1996 $35,236**

- **Completed the Mined Geologic Disposal System (MGDS) Advanced Conceptual Design (ACD). The MGDS ACD report documented surface, subsurface, waste package, and Nevada rail spur conceptual designs. The MGDS Phase I Design for the Viability Assessment was initiated and will be completed in FY 1997. Materials and waste form testing will continue to refine the basis for models in support of TSPA.**

- **Completed the FY 1996 Thermal Loading Study which provided an evaluation of thermal management options that considered performance, cost and schedule. The study also indicated how thermal loading flexibility can be achieved and documented when decisions must be made so that significant costs or schedule constraints are not incurred. The study also provided an updated reevaluation of selected key thermal goals and provided recommendations for updates to YMP's technical baseline.**

- **Initiated the Performance Confirmation Concepts Study. This study will be complete at the end of FY 1997. This study will result in a draft performance confirmation plan and will identify performance confirmation program requirements important to repository design, site characterization, pre-emplacement activities and post-emplacement monitoring.**

- **Proceeded with Waste Package investigations to produce a report on criticality control. Performed waste package materials testing and model development activities which will lead to the completion of two reports on engineering materials and waste form characteristics in FY 1997.**

- **Provided design and design support for the ESF. This work included design of the south portal and will continue into FY 1997.**

- **Continued to develop, establish, and maintain the MGDS technical baseline; provided input to the Office of Civilian Radioactive Waste Management (OCRWM) program TSLCC estimate; performed studies and analyses to resolve requirements, design, and testing issues; defined, interpreted and allocated engineering specialty requirements to produce a balanced Phase I design, provided determination of importance evaluations and revisions as needed to support design and test package preparation; defined and coordinate analyses to evaluate repository design basis events; and established QA classifications for items important to radiological safety and waste isolation. These activities will continue through FY 2000.**

Performance Assessment (FY 1996): **FY 1996 $12,144**

- **Conducted sensitivity analyses of process-level models, model abstractions and total system and subsystem performance assessment analyses. These analyses supported the allocation of performance to the different barriers of the total system and were used to identify site and design-related information required to support a defensible Performance Assessment for the Viability Assessment.**

- **Site and design organizations evaluated various components of the waste package/engineered barrier system, near-field environment, and geosphere to ensure that a range of alternative hypotheses were acknowledged, and if possible, tested. These analysis indicated which of the process models contributed most significantly to overall performance and which should have priority in developing the Viability Assessment.**

- **Developed data inputs, criteria and parameter validity tests for biosphere model selection.**

- **Completed the Project Integrated Safety Assessment (PISA) Management Plan to guide PISA development. The PISA is a management tool to help integrate those subjects considered necessary to support Viability Assessment safety cases including chapters discussing repository and waste package designs, engineered barrier system designs, conduct of operations, natural systems, radioactive waste management, etc. Individual chapters will be completed to coincide with the Viability Assessment in FY 1998. The PISA Management Plan was written to provide chapter authors with topics appropriate to support Viability Assessment safety cases, necessary level of detail, responsibilities, and schedule for completion of the PISA.**

- **Continued interactions with the NRC staff and on-site representatives, the NWTRB, and the Advisory Committee for Nuclear Waste, and began interactions with the Environmental Protection Agency (EPA).**

- **Conducted interactions with the EPA to provide early guidance, review, and comment on the EPA's development of a proposed rule making for health and safety standards for Yucca Mountain, and to work with the NRC as they draft regulations to implement the EPA's standards. These activities began in FY 1996 and will be completed when both the EPA and NRC have issued their revised rules.**

- **Continued development and production of the Semi-Annual Site Characterization Progress Report as required by the NWPAA. This activity will continue throughout the prelicensing period and will be completed in FY 2001 upon License Application submittal.**

- **Developed a response package to NRC comments on Seismic Hazards Methodology Topical Report I concerning erosion studies to support issue resolution.**

- **Supported database management tracking which requires that the Program Element maintain a complete record of all NRC related commitments and open items to support a future licensing process. This activity will continue throughout the prelicensing period and will be completed in FY 2001 upon License Application submittal.**
- **Completed the expert elicitation process and developed the Probabilistic Volcanic Hazard Assessment Report (PVHA). The purpose of the PVHA expert judgement project was to assess the probability of a volcanic event (intrusive or**

extrusive) disrupting the potential repository at Yucca Mountain and to quantify the uncertainties associated with this assessment. This analysis will provide the basis for the DOE to close the volcanism issue with the NRC.

- **Issued proposed rule to amend repository siting guidelines (10 CFR Part 960). Revision of the siting guidelines is necessary to identify criteria and clarify the process for evaluating the suitability of the Yucca Mountain site. The amendments reflected technical knowledge gained at Yucca Mountain and changes made since the guidelines were initially promulgated in 1984. The proposed revision added a methodology for applying the siting guidelines specific to Yucca Mountain. This activity began in FY 1996 and will be completed in FY 1997 upon promulgation of the final rule.**

- **Initiated a comparison of the scope of FY 1996 site synthesis reports to Chapter 3 of the License Application Annotated Outline to identify outstanding information needs and determine necessary site characterization activities for sufficient completeness at licensing. Identifying the remaining needs will ensure that a significant section of the License Application can be prepared in full.**

- **Updated the Waste Isolation and Containment Strategy (WICS), including new data or information and new alternative interpretations since the original draft. The WICS presented a strategy to evaluate Yucca Mountain for waste containment and isolation.**

Technical Data Management System

- **The Technical Data Management System identifies, maintains, and provides for retrieval of the technical data used for site modeling, performance assessment, and design and development efforts in support of the Viability Assessment, the SRR, and ultimately the License Application. The centralized, controlled repository of data ensured consistent analysis and evaluation of input data, thereby avoiding the potential for errors associated with incomplete or erroneous data sets acquired from various sources. These activities are continued through FY 2000, including updating the spatial data, link spatial and properties data, the Reference Information Base, and collecting new aerial imagery of the site to update surface disturbances.**

- **Identified data and records to be transferred to the Technical Data Base and Records Processing Center to ensure that the Program Element's data acquisition investment efforts were protected from loss due to program downsizing by identifying data and records to be transferred to the Technical Data Base and the Records Processing Center. In addition, hardware, software, and test equipment, purchased with Program Element funds and resident at various participant locations, were identified and transferred to the custody of the DOE. This effort will continue on a limited basis as work activities are closed out.**

- **Completed and distributed a controlled set of spatial data; updated the Project Site Atlas; and Issued new sets of information in the Reference Information Base.**

Licensing/Suitability (FY 1996):	**FY 1996**
	$0

NEPA (FY 1996): **FY 1996**
$0

- **Completed public scoping meetings (initiated in FY 1995) in various cities to provide an opportunity for the public to comment on the scope of the EIS.**

Project Management (FY 1996): **FY 1996**
$64,234

- **Ensured Program Element activities were planned, budgeted, scheduled and funded to meet OCRWM program objectives; ensured Program Element activities were accomplished in accordance with approved workscopes, authorized budgets, and scheduled milestones; ensured Program Element participants were provided with facilities, equipment, systems, and support services needed to perform their approved activities; ensured Program Element participants were trained and qualified to perform their approved activities; ensured Program Element activities were performed in accordance with applicable statutes, regulations and DOE orders and directives; and ensured that open and informative interactions with the public and Program Element stakeholders were provided in accordance with the NWPAA and the Secretary of Energy's customer service policy. These activities will continue through FY 2000.**

- **Provided termination costs due to downsizing the Program Element. Close out activities were completed in FY 1996.**

- **Provided PETT to units of local government.**

External Oversight: **FY 1996**
$0

Per Congressional direction, no funding was provided to the State of Nevada or Affected Units of Local Government. In FY 1996 these activities were displayed under the Project Management element.

FY 1997 Objectives

Consistent with the Program redirection and in support of the Viability Assessment, the main activities in FY 1997 will emphasize: core scientific activity, excavation of the exploratory tunnel, and completion of the repository and a waste package Phase I design. In support of the Viability Assessment in FY 1998, our main objective for FY 1997 is to complete numerical models needed to support TSPA. This suite of models will include process models describing flow of air and water, degradation of waste package containment barriers and waste forms, as well as transport of radionuclides. Process models describing the flow of water and the transport of radionuclides in the saturated zone, at both the site and regional scales, will also be included. These models will provide the basis for calculations evaluating groundwater travel time and the potential for radionuclide migration through the geosphere to the accessible environment (biosphere).

FY 1997 Planned Accomplishments

Operations/Construction (FY 1997): **FY 1997**

$90,611

- **Provide for a phased turnover of constructed ESF facilities to operations. Operations includes maintenance of facilities and utilities in support of continued testing and License Applications. This activity will continue through FY 1999. Some construction of additional alcoves or exploratory excavations may also be done during the pre-License Application period.**

- **Demobilize the TBM and complete construction of the Ghost Dance Fault test drifts. The completed ESF loop will allow continued testing and evaluation of the geology and hydrology of the southern portion of the proposed repository.**

- **Construct a limited amount of surface facilities at the north and south portals to support the ESF construction and operations. This activity will be ongoing through FY 2000.**

- **Undertake additional underground exploration as necessary, based upon analysis of ESF data.**

- **Ensure the protection of employees, members of the public, environment, and Program Element facilities and equipment from hazards that may result from site characterization and construction activities.**

- **Provide ESF underground safety support and on-site safety support to construction and operations; provide environmental support for operating hazardous waste accumulation facilities, managing hydrocarbon contaminated soil maintenance and disposal; and conduct surveillance of site activities to ensure compliance with environmental regulations and requirements.**

- **Maintain medical emergency services and fire prevention programs to support field activities. Maintain implementation of a safety and health program complying with applicable requirements. Continue implementation of the emergency management program.**

Core Science (FY 1997): **FY 1997**

$73,076

- **Prepare numerical models to support TSPA and refine our understanding of site geology and hydrology. Produce synthesis reports that includes conceptual models of geologic, hydrologic, geochemical, and geomechanical processes. The synthesis reports will summarize our knowledge gained from investigations identified and carried out under the YMP. Support abstraction and testing of process models for TSPA. Collect otherwise irretrievable data, such as seismic, stream flow, pneumatic, and meteorological to record transient events such as earthquakes, floods, and major storms.**

- **Analyze additional water and mineral samples for isotopic tracers. Tracers will be used to assess the time required for groundwater to travel from the surface to its present location. This data will be used to constrain and evaluate flow models for the site.**

- **Complete drill-hole WT-24 and conduct additional aquifer tests to characterize the steep hydraulic gradient and as input into the regional saturated zone hydrologic model.**

- **Initiate hydrologic testing in southern Ghost Dance fault alcove and continue testing in the northern Ghost Dance fault alcove to observe potential groundwater flow paths through the repository horizon. This will provide data crucial to the issue of fast flow paths through the unsaturated zone.**

- **Hydrologic testing in alcove #2 (Bow Ridge Fault), alcove #3 (upper contact PTn) and alcove #4 (lower contact PTn) will study water movement above the repository horizon. Initial data indicate that the PTn acts to buffer transient events, such as high fluid flux resulting from large storms. These tests will evaluate the magnitude and importance of this effect, and provide inputs and constraints on site scale flow and transport models.**

- **The drift scale heater test will be installed and heaters turned on during FY 1998. The drift scale heater test will be designed to approximate an actual emplacement drift. Thermal, hydrologic and geomechanical parameters will be monitored during the tests and data will be used to evaluate potential impacts on the near field environment. The drift scale heater test will include at least a two-year heat-up phase and a controlled cool-down phase.**

- **Conduct Probabilistic Seismic Hazards Assessment (PSHA). A PSHA will be conducted to complete the evaluation of potential hazard to the site from seismic activity and to produce seismic design parameters for facilities to be constructed at Yucca Mountain. This activity begins in FY 1997 and will be completed in FY 1998.**

- **Improve environmental baseline data collection effort to support our understanding of crosscutting disruptive processes such as climate change and other millennium events that might impact the Program's waste and containment strategy isolation.**

- **Perform data gathering and reporting of meteorological conditions to provide direct support to design, performance assessments, environmental analyses and radiological dose assessments. Meteorology inputs are also necessary to support the requirements of preclosure radiological safety, regional airflow patterns relative to population centers, and extreme weather conditions relevant to surface facility design.**

- **Conduct scientific and engineering reviews of hazardous and solid waste handling and ESF facility designs to ensure compliance with environmental regulations and requirements. This activity will continue through FY 2000.**

- **Perform preconstruction surveys to identify and characterize biological and cultural resources on lands proposed for surface-disturbing activities; perform interim and final reclamation activities as appropriate. This activity will continue through FY 2000.**

- **Complete data synthesis reports for radiological and terrestrial ecosystems field monitoring.**

- **Continue ES&H compliance activities including air quality and meteorology, water resources, archeological,**

radiological, ecosystems and socioeconomic monitoring; maintain and acquire requisite permits so that uninterrupted site activities may continue; and conduct surveillance, audits and assessments of site activities to ensure regulatory compliance. These activities will continue through FY 2000.

Design and Engineering (FY 1997):	**FY 1997**
	$77,328

- **Perform a Waste Quantity, Mix and Throughput Study which will identify impacts of different waste quantity, waste mix, and throughput scenarios on repository design, cost, and schedule as well as on program design, costs, and schedule in order to develop a recommendation for the program/project preferred repository waste quantity, mix and throughput rate. The study will also consider potential waste types, cask/canister alternatives (capacity, power output, dimensions) in developing the recommendations.**

- **Perform a Waste Generated Study to determine the potential amounts of and preferred disposal options for hazardous, mixed, and low-level wastes generated by the repository, for canisterized fuel and for uncanisterized fuel waste streams. This study will include an evaluation of packaging options available for each disposal option considered. This study, together with the Waste Quantity, Mix, and Throughput study, will provide the basis for sizing the waste handling/processing facilities.**

- **Perform a Waste Isolation Requirements Study to identify the ramifications of adopting a 10,000 year peak dose standard. Items examined will be the impact on repository and waste package design as well as on testing requirements and design. Alternative potential standards will also be evaluated for their impacts on the system. Also considered will be the confidence achievable in calculations that involve tens or hundreds of thousands of years of repository performance.**

- **Perform a Waste Package Size Study to document the rationale used for the selection of the waste package size(s). This study will consider how the waste package size(s) influences handling designs, viable emplacement modes, criticality control design, shielding design, near field thermal effects, surface facility design, cost, and design for recovery from off-normal events. It will also consider alternative Defense High Level Waste package configurations.**

- **Consolidate waste package test data for the initiation of topical reports on criticality methodology and possibly burnup credit, which will be submitted to the NRC in FY 1998. Consolidate and update waste package design features for input to the Viability Assessment.**

- **Perform a Retrievability Study to provide the technical bases for retrievability requirements, using 10 CFR 60 as the basis for development of specific requirements . This requirement definition is necessary to support Retrieval Design. The nature of the requirements will be the time required for retrieval, the potential conditions requiring retrievability, and the extent to which the repository/waste package designs should accommodate the retrieval option. This study will also address the potential scenarios concerning the temporary storage and final disposition of the retrieved waste.**

- **Perform a Seals Study to develop requirements for seals in the repository ramps and shafts and in the boreholes**

resulting from surface based testing. This study will also determine the role the seals must play in establishing compliance with 10 CFR 60 with respect to waste isolation and to returning the site to its natural condition. Also, the study will determine the role the seals must play in meeting state and county regulations related to abandoned boreholes.

- **Perform an MGDS Safeguards and Security Requirements Study to assess, analyze and document threats and vulnerabilities to the MGDS, and define requirements for security lighting, surveillance equipment, intrusion detection equipment, locking devices, entry control equipment, location of fencing, public address systems, and S&S control centers and material control and accounting.**

- **Continue to develop, establish, and maintain the MGDS technical baseline; provide input to the Office of Civilian Radioactive Waste Management (OCRWM) program TSLCC estimate; perform studies and analyses to resolve requirements, design, and testing issues; define, interpret and allocate engineering specialty requirements to produce a balanced Phase I design for Viability Assessment; provide determination of importance evaluations and revisions as needed to support design and test package preparation; define and coordinate analyses to evaluate repository design basis events; and establish QA classifications for items important to radiological safety and waste isolation. These activities will continue beyond FY 2000.**

Performance Assessment (FY 1997): **FY 1997**
$20,763

- **Begin updated TSPA analysis. The results of TSPA, including its technical peer review, will serve as the principal vehicle for integrating products of the scientific, design, and engineering program elements, a key component of the FY 1998 Viability Assessment.**

- **The first TSPA activity module, TSPA Orientation will culminate in FY 1997, and activities associated with the second module, Process Model Review, will be initiated. During the Process Model Review activity DOE will demonstrate relationships between the understanding of site processes and features, and numerical process models that describe these processes and features. The credibility of system and subsystem level performance calculations rests on the credibility of process level models that are the basis for this level of Performance Assessment modeling. Structural geologic, stratigraphic, and hydrogeologic data gained from the completed five mile tunnel and additional data from surface boreholes incorporated into models will be incorporated into performance assessment subsystem models.**

- **Develop a Performance Confirmation Plan to identify short and long term tests and analyses needed to verify performance predictions. Develop criteria and parameters for biosphere model analysis and selection.**

Licensing (FY 1997): **FY 1997**
$2,420

- **Develop the Project Integrated Safety Assessment (PISA). The PISA will be completed as a DOE document in FY 1999. The PISA will be written as a PISA Management tool to help integrate the key technical disciplines of the Program.**

- **Develop the License Application Plan. The License Application Plan will build upon the PISA Management Plan and include a regulatory analysis of existing regulations, Regulatory Guides, NUREGs, etc. for applicability to a License Application; section-by-section compliance demonstration strategy; identification of existing products and their qualification status, analysis and decisions on useability for compliance demonstrations; identification of data/data synthesis needs; responsibilities and schedule for completion. This activity begins in FY 1997 and will be completed in FY 1998.**

- **Perform all activities necessary to screen, image, index and quality check images of records in preparation for Licensing Support System (LSS) submission. Tasks include elimination of the records backlog, reprocessing of the existing microfilm based records, and processing of incoming records.**

- **Design specification documents; conduct design reviews; and develop an Acceptance Test and System Turnover Plans; and proposal evaluation and award.**

- **Issue final rule amending repository guidelines.**

NEPA (FY 1997): **FY 1997**
$5,250

- **The contract for a repository EIS technical support contractor will be awarded.**

- **Activities will include review scoping comments, categorize by issues/concerns, and prepare responses; draft description of proposed action and alternatives; and, analyze existing design performance assessment, and affected environment data for NEPA adequacy; gather additional data as necessary to support environmental analysis.**

Project Management (FY 1997): **FY 1997**
$48,516

- **Ensure Program Element activities are planned, budgeted, scheduled and funded to meet OCRWM program objectives; ensure Program Element activities are accomplished in accordance with approved workscopes, authorized budgets, and scheduled milestones; ensure Program Element participants are provided with facilities, equipment, systems, and support services needed to perform their approved activities; ensure Program Element participants are trained and qualified to perform their approved activities; ensure Program Element activities are performed in accordance with applicable statutes, regulations and DOE orders and directives; and ensure that open and informative interactions with the public and Program Element stakeholders are provided in accordance with the NWPAA and the Secretary of Energy's customer service policy. These activities will continue beyond FY 2000.**

- **Set aside $10M for scoring a new lease due to lease expiration of the current facilities.**

External Oversight and Payments Equal To Taxes (PETT) (FY 1997): **FY 1997**
$7,000

- **Per the FY 1997 Energy and Water Development Appropriations, the program may not provide financial and technical assistance to the State of Nevada, Affected Units of Government. The FY 1997 funding is exclusively for PETT payments. These activities will continue through FY 2000 and beyond.**

FY 1998 Objectives

Major work for FY 1998 is to complete the Viability Assessment, perform EIS and License Application activities, and start preliminary License Application design for repository and waste package. The Viability Assessment will report results of: site characterization studies, contain advanced designs for repository operation and waste package transport and emplacement, address the ability of repository/waste package, acting as a total system, to isolate and contain radioactive waste, and estimate of the cost to construct and operate the repository.

FY 1998 Planned Accomplishments

Operations/Construction (FY 1998):	**FY 1998**
	$68,500

- **Initiate excavation of additional exploratory drifts which includes 2600 meters of 5 meter diameter cross drifts including associated support for mapping and science. Provide for construction of utility and ventilation systems for these drifts.**

- **Provide continued test support as required for test setup, additional alcove construction and utilities to these tests. Provide for Data Acquisition System additions to collect and manage the data collected from these tests. Provide for training and maintenance of the test systems .**

- **Complete phased turn-over of the ESF facilities to operations for testing and scientific investigations. Maintain ESF as a safe working environment for scientist and engineers and a safe environment for public visits. Provide for maintenance and additions of ventilation, electric, and other utility systems.**

- **Provide for studies of existing power station and add additional power capacity to support waste drifts. Also increase the capacity of power transmission lines. Review the transmission system studies for outages and stability.**

- **Ensure the protection of employees, members of the public, environment and Program Element facilities and equipment from hazards that may result from site characterization and construction activities. These activities will continue beyond FY 2000.**

- **Provide ESF underground safety support and on-site safety support to construction and operations; provide environmental support for operating hazardous waste accumulation facilities, managing hydrocarbon contaminated soil maintenance and disposal; and conduct surveillance of site activities to ensure compliance with environmental regulations and requirements. These activities will continue beyond FY 2000.**

- **Maintain medical emergency services and fire prevention programs to support field activities. Maintain implementation of a safety and health program complying with applicable requirements. Continue implementation of the emergency management program. These activities will continue beyond FY 2000.**

Core Science (FY 1998): **FY 1998**
$87,000

- **Complete the PISA, Chapter 2, Site Characteristics which will include the updated Site Description. A discussion will be provided of all data collected related to geology and hydrology. Complete full documentation of data sources and description of conceptual models of geologic and hydrologic processes operating at the site, and submit records packages. This data will support continued efforts by performance assessment, repository design and waste package design.**

- **Begin performance confirmation data collection and testing. The data will be used to fill information gaps or resolve uncertainties and provide additional technical bases for the License Application. The data will be incorporated into process models to be completed in FY 1999 to support TSPA-LA.**

- **Perform data analysis and reporting of meteorological conditions to provide direct support to design, performance assessments, environmental analyses, and radiological dose assessments. Provide meteorological inputs to support the requirements of preclosure radiological safety analysis. Integrate meteorological analysis information into the TSPA, biosphere and EIS data sets. Investigate airborne transport in biosphere modeling for the EIS.**

- **Initiate the unsaturated zone transport test to investigate scaling effects between laboratory and in situ tests and to validate the site scale transport model for License Application.**

- **Complete the single element heater test to collect information on rock mass thermal and mechanical properties and near-field thermal-hydrologic-chemical processes needed for performance assessment, repository design, and waste package design.**

Design and Engineering (FY 1998): **FY 1998**
$74,878

- **Develop an updated estimate of the MGDS portion of the TSLCC. This cost estimate will include developing and/or updating MGDS development, construction, operations (emplacement and caretaker), closure, and decommissioning costs.**

- **Complete design elements that are critical to determining the feasibility and performance of the repository and the engineered barrier system and the TSPA for the Viability Assessment.**

- **Start the MGDS design for License Application for the waste package, surface and subsurface of the repository. This design phase will include descriptions and operations concepts to a level of detail which significantly covers those systems, structures, and components necessary for radiation safety or those components that do not have regulatory precedence with the NRC.**

- **All aspects of the waste packages and the engineered barrier system that are important to the waste isolation will be advanced in preparation for development of input to the EIS, SRR, and Safety Analysis Report.**

- **The Waste Form Characteristics Report and Engineered Materials Characteristics Report will be updated to support the TSPA analyses.**

- **A Decommissioning Study will be performed to develop requirements pertaining to the activities necessary to close and decommission the repository once the NRC has granted a license for permanent closure of the repository.**

- **Complete an MGDS "*Conduct of Operations*" covering the period from initial receipt of waste through repository closure.**

- **Provide design and engineering support for design of any additional underground testing deemed necessary. This effort would continue beyond FY 2000.**

- **Continue to develop, establish, and maintain the MGDS technical baseline; provide input to the Office of Civilian Radioactive Waste Management (OCRWM) program TSLCC estimate; perform studies and analyses to resolve requirements, design, and testing issues; provide determination of importance evaluations and revisions as needed to support design and test package preparation; defined and coordinate analyses to evaluate repository design basis events; and establish QA classifications for items important to radiological safety and waste isolation. These activities will continue beyond FY 2000.**

Performance Assessment (FY 1998): **FY 1998**
$20,000

- **Issue Total System Performance Assessment - Viability Assessment (TSPA-VA). The TSPA-VA will serve as the principal vehicle for integrating the products of the scientific, design, and engineering program elements, and as such constitutes a key component of the 1998 Viability Assessment. In TSPA-VA, relevant abstracted model results, simplified process models, and design information will be combined and a reference case set of parameters to determine expected repository performance will be developed. Performance measures will include estimated doses to affected populations and/or releases at specified boundaries. TSPA-VA will present sensitivity and uncertainty analyses to define the key parameters that impact total system performance and to evaluate the significance of alternative assumptions to the confidence in the overall prediction. The implications of TSPA-VA results to the scientific and design organizations will be described, and will recommend testing and design modifications which could significantly reduce uncertainty or enhance performance. Revisions and enhancements to these models and parameters will be reflected in the TSPA analyses supporting License Application.**

- **Conduct the third TSPA-VA peer review activity module, which is the Abstract Model Review. During the Abstract Model Review activity, DOE will demonstrate that the data embodied in detailed scientific and engineering models are credibly extracted to abstracted performance assessment models. Revisions to the approach identified in the Process Model Review will be documented, and technical assumptions and methods will be updated.**

- **Initiate the first in a series of activities supporting software qualification for TSPA, Saturated Zone Flow Software Qualification. Provide uncertainty analysis and data input into biosphere model.**

- **Complete and distribute a controlled set of spatial data, update the Project Site Atlas, and issue new sets of information in the Reference Information Base.**

Licensing (FY 1998): **FY 1998**
$4,000

- **Complete the PISA as a Revision 0 DOE document. The PISA will be completed in August 1998 in conjunction with the viability assessment. The PISA will provide supporting information to the four elements of the viability assessment.**

- **Develop Seismic Methodology Topical Report III. The third and final seismic methodology topical report will be completed for submittal to the NRC. Early NRC staff acceptance of the seismic methodology used in the design of a repository will reduce programmatic risk to the DOE.**

- **Continue to perform all activities necessary to screen, image, index and quality check images of records in preparation for LSS submission. Tasks include elimination of the records backlog, reprocessing of the existing microfilm based records, and processing of incoming records. Initiate technology assessment of optical character recognition and image pattern recognition in support of full text search capabilities for LSS.**

NEPA (FY 1998): **FY 1998**

$6,000

- **Prepare environmental impacts and consequence analysis for each technical discipline in the EIS. The preliminary impact analyses will consider results of a total system performance assessment of the repository. Preliminary drafts of the Impact Analyses and Environmental Consequences will then be developed and mitigation measures will be identified.**

Project Management (FY 1998): **FY 1998**
$46,500

- **Continue with Project Management activities.**

External Oversight and Payments Equal To Taxes (PETT) (FY 1998): **FY 1998**
$18,122

- **Resume oversight activities with the State of Nevada and affected units of local government. Continue making PETT payments.**

FY 1999 Objectives

Continue with licensing and EIS activities and repository and waste package design. Continue ESF operations for testing and complete the draft Environmental Impact Statement. Issue DEIS and conduct public hearings. Prepare a 10 CFR Part 960 Compliance Report to evaluate if Yucca Mountain is suitable for development of a mined geologic repository. The PISA and any new information developed after the PISA will provide the technical basis for the regulatory conclusions documented in the compliance report.

FY 1999 Planned Accomplishments:

Operations/Construction (FY 1999): **FY 1999**
$65,000

- **Excavate any additional tunneling needed to provide engineering data for final repository design. This could include a drift that would cut across the host geologic repository member to give a more complete rock characteristic description of the repository.**

- **Continue operation and maintenance of the ESF.**

Core Science (FY 1999): **FY 1999**
$69,000

- **Continue performance confirmation data collection and testing. The data collection activities will include initiation of the second saturated zone flow test; complete drift scale heater test heat up and if sufficient data have been collected,**

start the cool down; continuation of long-term monitoring in the ESF and monitoring of transient events; completion of

the Ghost Dance fault testing; complete confirmation of flow and transport models for TSPA License Application; and continue long-term testing of waste package materials and waste forms.

- **Perform meteorological data analysis and reporting for TSPA and radiological dose assessments. Integrate meteorological analysis information into TSPA, biosphere and EIS data sets. Investigate airborne transport in biosphere modeling for EIS.**

Design and Engineering (FY 1999): **FY 1999**
$69,000

- **Complete the MGDS Phase II design for License Application with alternatives for waste package, surface and subsurface repository facilities, and the rail spur. Waste package activities will include design to support License Application and NEPA processes, as well as long term waste form and materials testing for model refinement and validation process. Repository activities will include development of facilities design with alternatives and operations concepts to support the License Application and NEPA processes. Design of underground emplacement areas will continue to be refined with the addition of new data from testing programs.**

- **Prepare a License Application Test and Evaluation Plan to establish the Project-System test approach that will be specified in the MGDS License Application. The general objectives of the Test and Evaluation Plan are to support system design and development, verify compliance with project technical requirements, and estimate the operational suitability of the system.**

Performance Assessment (FY 1999): **FY 1999**
$16,000

- **Conduct the TSPA-Viability Assessment Peer Review. During the TSPA-VA Peer Review, DOE will present the TSPA-VA report to the Peer Review Panel and will describe the results. The Panel will catalog their impressions and make final formal information requests in a letter report. The Panel will deliver to the DOE a report documenting the conduct and results of the peer review, including formal recommendations for changes in approach, methods, and scope for performance assessment analyses conducted in support of License Application.**

- **Continue series of activities supporting software qualification for TSPA. Provide sensitivity analysis/quantification of final biosphere modeling inputs.**

- **Ensure that the program element's data acquisition investment efforts are protected from loss due to program downsizing by identifying data and records to be transferred to the Technical Data Base and the Records Processing Center. Hardware, software, and test equipment, purchased with program element funds and resident at various participant locations, will be identified and transferred to the custody of the DOE. This effort will continue on a limited basis as work activities are closed out.**

- **Complete and distribute a controlled set of spatial data, update the Project Site Atlas, and issue new sets of**

information in the Reference Information Base.

Licensing (FY 1999): **FY 1999**
$5,000

- **Request sufficiency comments from the NRC. The NRC will be requested to review the site characterization program and provide comments on its sufficiency for licensing. The PISA will be an initial document provided to the NRC; other information will be provided as necessary for the NRC's review.**

- **Develop a draft License Application. The Project will utilize the information contained in the PISA, new site characterization or synthesized data, and the License Application Plan to develop a draft License Application. The draft License Application will contain the safety case arguments being developed. This activity will continue into FY 2000 when reviews of the draft License Application begin and will end in FY 2001 at completion and submittal to the NRC.**

NEPA (FY 1999): **FY 1999**
$14,000

- **Prepare preliminary Draft Environmental Impact Statement (DEIS) for internal DOE review, incorporate changes, and prepare and publish the Draft EIS for public comment. The six month public comment period will be started. Public hearings on the Draft EIS will be held during the public comment period. Comment collection, categorization, and analysis will be initiated.**

Project Management (FY 1999): **FY 1999**
$46,200

- **Continue with Project Management activities.**

External Oversight and Payments Equal To Taxes (PETT) (FY 1999): **FY 1999**
$15,800

- **Continue with External Oversight activities and PETT payments.**

FY 2000 Planned Accomplishments:

Operations/Construction (FY 2000): **FY 2000**
$35,900

- **Continue with ESF maintenance and ES&H activities.**

Core Science (FY 2000): **FY 2000**
$58,200

- **Complete the site description for License Application. Continue data collection for performance confirmation (including the drift-scale thermal test), monitoring transient events, such as earthquakes, and large precipitation events, and confirmation testing of waste package materials and waste forms. Report thermal testing results to date. Confirm**

near-field environment model for License Application.

Design and Engineering (FY 2000): **FY 2000**
$99,400

- Finalize enhancements to the MGDS design in preparation for input to the License Application. Initiate preparation of the License Application documentation, including the designs for the waste packages, surface facilities, subsurface facilities, and supporting analyses to demonstrate compliance with applicable 10 CFR 60 regulations. Documentation will also include data and detailed process models used as the technical basis for PA models to demonstrate compliance.

- Start the MGDS detailed design. This will be the final design phase which will provide the necessary detailed drawings and operating plans required for the start of construction.

Performance Assessment (FY 2000): **FY 2000**
$16,400

Site Recommendation

- The viability assessment is a programmatic management tool that represents an early and integral step on the path needed to make a Site Suitability decision. If the site is determined to be suitable with respect to the revised siting guidelines in FY 1999, a decision by the Secretary of Energy to recommend the site is expected in 2001. In preparation for this decision, in FY 2000, publish a Notice of Consideration to inform the public and announce a schedule for public hearings in the vicinity of Yucca Mountain on the possible recommendation.

Performance Assessment

- Incorporate the results of model abstraction and testing into the sensitivity analyses of the TSPA. The outcomes of the sensitivity analyses conducted in support of License Application will be documented and reviewed, and will include a comparison of the sensitivity analyses used in previous TSPA analysis.

- As in the thermo hydrologic models abstraction and testing phase conducted for the Viability Assessment, a working group will be convened to assure proper integration of more recent information that may have changed the bases for the model. Uncertainties will be reviewed to ascertain whether they need to be incorporated in the TSPA-License Application. Additional sensitivity analyses will be conducted to identify those areas where further Design and Engineering and/or Core Science activities are required to lower total system Performance Assessment.

- Ensure that the program element's data acquisition investment efforts are protected from loss due to program downsizing by identifying data and records to be transferred to the Technical Data Base and the Records Processing Center. Hardware, software, and test equipment, purchased with program element funds and resident at various

participant locations, will be identified and transferred to the custody of the DOE. This effort will continue on a limited

basis as work activities are closed out.

- **Complete and distribute a controlled set of spatial data, update the Project Site Atlas, and issue new sets of information in the Reference Information Base.**

Licensing (FY 2000): **FY 2000**
$13,800

- **Continue to process incoming records and obtain LSS certification from the NRC.**

NEPA (FY 2000): **FY 2000**
$14,500

- **Prepare the final EIS, incorporating the results of the public comment period. A preliminary Final EIS for internal DOE review will be issued. Internal comments will be incorporated and the Final EIS will be issued followed by the issuing of a Record of Decision.**

Project Management (FY 2000): **FY 2000**
$46,000

- **Continue with Project Management activities.**

External Oversight and Payments Equal To Taxes (PETT) (FY 2000): **FY 2000**
$15,800

- **Continue with External Oversight activities and PETT payments.**

IV. Explanation of Funding Changes FY 1997 to FY 1998

The significant adjustments to the FY 1998 budget are a decrease in Operations/Construction from ($90,611 to $68,500) which reflects the completion of significant underground construction activities; increases in Core Science to support the Viability Assessment from ($73,076 - $87,000); an Licensing ($2,420 - $4,000) increase in FY 1998 is to conduct an expected increase in interactions with stakeholders and continue technical data management at an accelerated pace; and an increase in NEPA ($5,250 - $6,000). is for the preparation of the Repository Environmental Impact Statement (Repository EIS).

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST

NUCLEAR WASTE ACTIVITIES
(Tabular dollars in thousands. Narrative material in whole dollars)

Yucca Mountain Site Characterization Project
Project Data Sheets

IV. A. Operating Expense Funded Subproject Summary

Subproject No.	Subproject Title	Previous Obligations	FY 1997 Appropriated	FY 1998	Unappropriated Balance	TEC
83-W-100	Exploratory Studies Facility	$ 402,815	$ 62,200	$ 40,300	$ 24,795	$ 349,873

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE ACTIVITIES
(Tabular dollars in thousands. Narrative material in whole dollars)

Yucca Mountain Site Characterization Project
Project Data Sheets

IV. B. Operating Expense Funded Subproject Descriptive Summary
1. Project Title and Location: Subproject 83-W-100, Exploratory Studies Facility (ESF), Yucca Mountain, Nye County, Nevada **TEC: $349,873 b/** **TPC: $675,273 a/**

Physical Construction Start Date: 1st Qtr FY 1996 Completion Date: 2nd Qtr. FY 2000

2. Financial Schedule (Federal Funds):

Fiscal Year	Appropriation	Adjustments	Obligations	Costs
Previous.....	$ 386,663	+ 1,141 c/	$ 402,815	$405,015
1997.....	62,200	- 1,147 d/	46,812	46,812
1998.....	40,300	+ 10,943 e/	40,300	40,300

a/ **TPC is the current cost baseline approved by the Energy System Acquisition Advisory Board (ESAAB) in January, 1992, for the total Yucca Mountain Site Characterization Project work scope, which consists primarily of non-construction work for scientific investigations and License Application development.**

b/ **TEC has decreased $95,807,000 as a result of reduced construction relative the Program Approach.**

c/ **Reflects use of prior-year balances during FY 1992 to support the completion of that portion of Title II design required for the start of site preparation in the first quarter of FY 1993, for the first access ramp portal.**

d/ **Budget authority transferred to other YMP program elements to fund ESF regulatory, repository/ESF interfaces and system studies, occupation and mined safety and health training.**

e/ **Transfers prior-year balances from other YMP program elements during FY 1996 to fund the TBM activities.**

3. **Narrative: Technical changes from the FY 1996 Congressional budget submission are due to four factors: 1) efficiencies**

brought about by having over 2 year's actual TBM operating experience; 2) increased integration of scientific investigators' needs to access the excavated areas and TBM excavation schedule, resulting in reduced TBM "down time"; 3) shifting away from single purpose alcoves; and 4) streamlining necessitated by significant reductions in FY 1996 appropriations and reduced outyear targets in this FY 1997 budget submittal.

The primary objective of this subproject is to collect and analyze data to be used in determining the suitability of the Yucca Mountain candidate site for the construction of a potential high-level nuclear waste repository. Construction, as defined in the Exploratory Studies Facility Design Requirements Document, will: (1) provide access to selected underground tuff horizons and surrounding strata in an unsaturated zone and perform in-situ testing in the selected horizons at the Yucca Mountain candidate site, and (2) provide the ability to safely and effectively acquire the necessary data for design of a potential repository, performance assessment, viability assessment, and license application.

The Exploratory Studies (ES) project will contribute to scientific investigation through extensive in-situ testing. This testing will assess geologic characteristics and characteristic variables; analyze the hydrologic properties to aid in evaluation of the isolation capability of the candidate tuff horizon; and determine whether the stability of openings can be maintained throughout the operational life of the potential repository without adversely affecting isolation capability or retrievability. At the conclusion of the ES program, and through the use of data obtained in other Yucca Mountain site investigation activities, data will be available to assess the suitability of the tuff at the site for use as a nuclear waste repository.

The budget authority level requested for FY 1998 will provide support to: complete the construction of the surface facilities at the north and south portals. Continuing support activities include: test planning, coordination and provisions of construction support for testing; Title III engineering support for construction; project engineering and construction management; and ESF operations and maintenance. If deemed necessary to provide data for final engineering design, additional drifts may be excavated in FY 1999.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(Dollars in thousands)

WASTE ACCEPTANCE, STORAGE AND TRANSPORTATION

I. Mission Supporting Goals and Objectives

The Waste Acceptance, Storage and Transportation (WAST) Program Element includes the long-lead time activities that must precede removal of spent nuclear fuel (SNF) from reactor sites once a Federal facility becomes available. This includes a market-driven initiative to create a national transportation capability necessary to accept and transport SNF. The initiative will involve a procurement process beginning with the procurement of business plans for contracts to the private sector for canister, transport cask and storage module production, and waste acceptance and transportation services. This approach offers a market stimulus for commercial development of the equipment and management capability required for the transportation and storage of SNF.

The FY 1998 Budget Request assumes that the Program completes a viability assessment by September 30, 1998. FY 1998 funding will provide for the continuation of the development of the procurement initiative for transportation equipment and services.

Spent Fuel Storage

This activity includes interacting with the NRC during their review of the Phase I Topical Safety Analysis Report (TSAR) for an Interim Storage Facility (ISF) and issuance of a Safety Evaluation Report (SER) as well as continuing non-site specific contingency planning for an ISF. Technology demonstration projects that have the potential to benefit one or more areas of the Program Element, including the Spent Fuel Management at the West Valley Demonstration Project, and the Spent Fuel Behavior and Long Term Storage and Monitoring Project, were transferred to DOE's Office of Environmental Management (EM) at the beginning of FY 1997.

Transportation

This activity includes planning for a safe, environmentally acceptable, and cost-effective transportation capability. A procurement process is being developed to utilize private sector entities to accomplish the Department's commercial spent nuclear fuel waste acceptance and transportation requirements. The proposed procurement has been phased to facilitate contract definition and performance. Development of plans for waste acceptance, storage modules, and transportation services and equipment will proceed. This activity also includes the planning, identification and resolution of institutional issues and interactions with stakeholders, the payment of technical assistance and training funds (Section 180(c)), and the

development of analytical processes and transportation databases to support overall program requirements; and the continuation of burn-up credit studies.

Waste Acceptance

Waste Acceptance activities focus on plans for achieving the legal and physical transfer of waste to the Federal Government from the owners of SNF and HLW, once a Federal facility is ready to begin operations; supporting the transportation, storage and disposal of waste, once accepted; and developing recommendations for the Department's Waste Acceptance policy. Activities required to facilitate Waste Acceptance include: 1) development of a process for the orderly transfer of SNF and HLW into the Federal system consistent with the needs of both the Federal Government and the owners and generators; 2) development of a plan to carry out the program's Waste Acceptance responsibilities; and 3) continuation of a collaborative dialogue with the Nation's nuclear utility companies as well as other owners and interested stakeholders. Includes contingency planning support, studies and analyses directed toward the market-driven approach. (See Transportation activities regarding the waste acceptance and transportation RFP).

MPC Subsystem

This activity, as a part of the WAST Project, was terminated in FY 1996 with the completion of the MPC SAR Design.

Project Management and Integration

Project Management and Integration (PM&I) consists of activities and tasks that support each of the product areas for the WAST Project. Specifically, the PM&I area includes the traditional areas of project management, project control, and technical and programmatic integration of tasks and activities across the Project. These integration tasks include Project Integration, Systems Engineering, Environmental Safety and Health, NEPA Compliance, and Quality Compliance.

II. Funding Schedule:

Program Activity	FY 1996	FY 1997	FY 1998	$ Change	% Change	FY 1999*	FY 2000
WAST							
Spent Fuel Storage	1,000	2,582	2,000	(582)	-23%	12,000	12,000
Transportation	5,100	5,768	5,768	0	0%	19,500	19,500
Waste Acceptance	2,300	591	1,173	582	98%	2,000	2,000
MPC Subsystem	1,800	0	0	0	0%	0	0
Project Integration	3,400	995	995	0	0%	1,500	1,500
TOTAL WAST **	13,600	9,936	9,936	0	0%	35,000 ***	35,000 ***

*** FY 1999 includes partial funding the Quality Assurance (QA) program. The budget justification for the QA program is included in the Program Integration element.**

**** The FY 1998 budget request assumes that the $85M reserved in the FY 1996 Defense Waste Appropriation will be released in FY 1999 for waste acceptance and transportation services activities.**

***** The outyear funding for account for fiscal years 2000-2002 does not reflect the impact of the 1998 viability assessment of Yucca Mountain.**

III. Performance Summary:

FY 1996 Accomplishments:

Spent Fuel Storage (FY 1996): **FY 1996 $1,000**

- **Initiated preparation of the non-site specific Phase I interim storage facility (ISF) Topical Safety Analysis Report (TSAR) in FY 1996 to complete initial submission to the NRC in FY 1997.**

- **The Long Term Storage and Monitoring Project, the Spent Fuel Behavior in Long Term Storage Study and Spent Fuel**

Storage at West Valley continued with carryover funds from FY 1995.

- **Completed the Dry Rod Consolidation Technology Disposition Project.**

- **Completed transfer of management responsibilities for DOE-owned spent fuel to Office of Environmental Management by September 30, 1996.**

- **Maintained and updated data base on industry developments for storage and transportation technology. (FY 1996 - FY 2000)**

Transportation (FY 1996): **FY 1996**
$5,100

- **Completed GA-4 legal-weight truck (LWT) cask scale model regulatory tests, prepare lessons learned and conducted orderly shutdown. Conducted orderly shut-down of testing of the GA-9 LWT cask trailer, prepared test report, and prepared lessons learned.**

- **Completed technical reports to support the Actinide-Only Pressurized Water Reactor Burnup Credit Topical Report. The reports responded to comments received from the NRC. Completed specific studies and analyses to support the topical report.**

- **Issued notice of expression of interest for market-driven approach.**

- **Maintained transportation database. (FY 1996 - FY 2000)**

- **Published a Notice of Proposed Policy and Procedures for implementing Section 180© of the NWPA in the Federal Register.**

- **Stakeholder interaction, including cooperative agreements, will continue. (FY 1996 - FY 2000)**

- **Continued contingency planning, studies and analyses. (FY 1996 - FY 2000)**

Waste Acceptance (FY 1996): **FY 1996**
$2,300

- **Developed a WAST Operations Plan, including a WAST Concept of Operations.**

- **Processed Delivery Commitment Schedules (DCSs) and issued the Acceptance Priority Ranking/Annual Capacity Report. Reviewed DCS Exchange requests as required. (FY 1996 - FY 2000)**

- **Performed interface activities with Purchasers/Producers. (FY 1996 - FY 2000)**

- **Performed fee verification for commercial SNF. (FY 1996 - FY 2000)**

- **Processed commercial spent nuclear fuel inventory database. (FY 1996 - FY 2000)**

- **Interacted with DOE, IAEA, NRC, utilities and others concerning safeguards, including evaluation of IAEA approach to safeguards and development of overall safeguards and security/MC&A requirements. (FY 1996 - FY 2000)**

- **Responded to litigation brought by producers of SNF due to DOE not being ready to accept waste in 1998.**

- **Developed and tested a Unified DataBase (UDB) system that supports Waste Acceptance planning and operations.**

- **Coordinated with producers of SNF to develop Waste Acceptance Criteria compatible with CRWMS design requirements and Producer's development schedule.**

- **Defined roles and responsibilities and issues concerning acceptance of EM waste and developed a draft OCRWM/Environmental Management (EM) Memorandum Of Agreement (MOA).**

- **Supported contingency planning, studies and analyses directed toward the market-driven approach. (FY 1996 - FY 2000)**

Multi-Purpose Canister Subsystem (FY 1996): **FY 1996**
$1,800

- **Completed the MPC Designs and Safety Analysis Reports. Negotiated a contract closeout.**

- **Completed the Preliminary Draft MPC EIS and transfered lead responsibility to the Department of the Navy.**

Project Management & Integration (FY 1996): **FY 1996**
$3,400

- **Provided cost, schedule, planning, and integration related tools and services: cost and schedule baseline management; Strategic and Program Plan development/update; and project management documentation. (FY 1996 - FY 2000)**

- **Provided project control functions through monitoring cost, schedule and technical performance, performing variance analyses, and developing and implementing corrective actions. (FY 1996 - FY 2000)**

- **Developed the FY 1997 OWAST Annual Plan, FY 1998 CBR/OMB/Congressional budget submittals, and supported the**

project validation review process.

- **Provided WAST systems engineering services and tools to: implement technical management; maintained WAST life cycle cost estimates, supported TSLCC, and updated WAST program element LCC Report; maintained and managed the technical baseline; conducted/coordinated system studies and analyses including the WAST Operations Plan; and performed/supported verification and design control. (FY 1996 - FY 2000)**

- **Provided Environment, Safety and Health management/planning. (FY 1996 - FY 2000)**

- **Provided WAST Program Element Quality Compliance activities. (FY 1996 - FY 2000)**

FY 1997 Planned Accomplishments:

Spent Fuel Storage (FY 1997):	**FY 1997**
	$2,582

- **Submit Phase I Topical Safety Analysis Report to NRC.**

- **Respond to NRC's requests for additional information on the non-site specific Phase I interim storage facility (ISF) Topical Safety Analysis Report (TSAR).**

- **Perform non-site specific contingency planning for an ISF. (FY 1997 - FY 1999)**

Transportation (FY 1997):	**FY 1997**
	$5,768

- **Issue draft RFP for waste acceptance and transportation services including canister, transport cask and storage module production for comment.**

- **Issue Notice of Final Policy and Procedures for implementing Section 180© of the NWPA.**

- **Perform pre-award procurement activities.**

- **Submit revised topical report to the NRC and continue performing burn-up credit studies and analyses for both PWR and BWR (FY 1997 - FY 2000)**

Waste Acceptance (FY 1997)	**FY 1997**
	$591

- **Monitor Standard Disposal Contract and issue the FY 1997 APR/ACR. Review DCS Exchange requests as required.**

- **Perform verification of FY 1997 commercial SNF fees.**

- **Process FY 1997 commercial SNF inventory database.**

Multi-Purpose Canister Subsystem (FY 1997): **FY 1997**
$0

- **The WAST Project portion of this activity was terminated in FY 1996 with the completion of the MPC SAR Design**

Project Management & Integration (FY 1997): **FY 1997**
$995

- **Develop the FY 1998 OWAST Annual Plan, FY 1999 CBR/OMB/Congressional budget submittals, and support the project validation review process.**

- **Develop the FY 1997 WAST program element Life Cycle Cost (LCC) Report.**

FY 1998 Planned Accomplishments:

Spent Fuel Storage (FY 1998): **FY 1998**
$2,000

- **Finalize responses and interactions with the NRC during their review of the non-site specific Phase I ISF TSAR.**

Transportation (FY 1998): **FY 1998**
$5,768

- **Continue to develop activities necessary for a safe, environmentally acceptable and cost effective transportation capability.**

- **Prepare and distribute application package to States and Tribes for implementing Section 180© of the NWPA.**

Waste Acceptance (FY 1998): **FY 1998**
$1,173

- **Maintain Standard Disposal Contract and issue the FY 1998 APR/ACR. Review DCS Exchange requests as required.**

- **Perform verification of FY 1998 commercial SNF fees.**

- **Collect and process FY 1998 commercial spent nuclear fuel inventory database.**

- **Implement the provisions of the RW/EM Memorandum of Agreement on acceptance of DOE owned waste. (FY 1998 - FY 2000)**

Multi-Purpose Canister Subsystem (FY 1998): **FY 1998**
$0

- **The WAST Project portion of this activity was terminated in FY 1996 with the completion of the MPC SAR Design**

Project Management & Integration (FY 1998): **FY 1998**
$995

- **Develop the FY 1999 OWAST Annual Plan, FY 2000 CBR/OMB/Congressional budget submittals, and support the project validation review process.**

- **Perform cost estimating to update the FY 1997 WAST program element LCC Report. Prepare change pages or white papers as appropriate.**

FY 1999 Planned Accomplishments:

Spent Fuel Storage (FY 1999): **FY 1999**
$12,000

- **Assuming Legislative authorization and site identification:**
  - **Begin site investigations at the ISF site.**
  - **Initiate Phase I site-specific ISF design.**
  - **Begin ISF Phase I license application.**

- **Receive Phase I non-site specific ISF TSAR SER from the NRC.**

Transportation (FY 1999): **FY 1999**
$19,500

- **Continue to develop activities necessary for a safe, environmentally acceptable and cost effective transportation capability.**

- **Begin providing technical assistance and funding to states and tribes under Section 180© of the NWPA.**

Waste Acceptance (FY 1999): **FY 1999**
$2,000

- **Process Delivery Commitment Schedules (DCSs) and issue the FY 1999 APR/ACR. Review DCS Exchange requests as required.**
- **Perform verification of FY 1999 commercial SNF fees.**
- **Process FY 1999 commercial SNF inventory database.**

Multi-Purpose Canister Subsystem (FY 1999): **FY 1999**
$0

- **The WAST Project portion of this activity was terminated in FY 1996 with the completion of the MPC SAR Design**

Project Management & Integration (FY 1999): **FY 1999**
$1,500

- **Develop the FY 2000 OWAST Annual Plan, FY 2001 CBR/OMB/Congressional budget submittals, and support the project validation review process.**
- **Develop the FY 1999 WAST program element LCC Report.**

FY 2000 Planned Accomplishments:

Spent Fuel Storage (FY 2000): **FY 2000**
$12,000

- **Complete ISF Phase I Environmental Report.**
- **Submit ISF Phase I license application to the NRC.**
- **Receive Phase I ISF construction approval (CD-3).**
- **Issue RFP(s) for Phase I ISF construction and operation.**

Transportation (FY 2000): **FY 2000**
$19,500

- **Continue to develop activities necessary for a safe, environmentally acceptable and cost effective transportation capability.**
- **Submit PWR Principal Isotope Burnup Credit Topical Report to the NRC**

- **Provide technical assistance and funding to states and tribes under Section 180© of the NWPA.**

Waste Acceptance (FY 2000): **FY 2000**
$2,000

- **Acquire materials accounting data management system.**
- **Process DCSs and issue the FY 2000 APR/ACR. Review DCS Exchange requests as required.**
- **Perform verification of FY 2000 commercial SNF fees.**
- **Process FY 2000 commercial SNF inventory database.**

Multi-Purpose Canister Subsystem (FY 2000): **FY 2000**
$0

- **The WAST Project portion of this activity was terminated in FY 1996 with the completion of the MPC SAR Design**

Project Management & Integration (FY 2000): **FY 2000**
$1,500

- **Develop the FY 2001 OWAST Annual Plan, FY 2002 CBR/OMB/Congressional budget submittals, and support the project validation review process.**
- **Perform cost estimating to update the FY 1999 WAST program element LCC Report. Prepare change pages or white papers as appropriate.**

IV. Explanation of Funding Changes FY 1997 to FY 1998

- **The budget for Spent Fuel Storage decreases from $2.5M to $2M. The decrease reflects that this element will concentrate on maintaining interaction with the Nuclear Regulatory Commission in completing their review of the non-site specific Phase I Interim Storage Facility Topical Safety Analysis Report and non-site specific design and engineering.**
- **The budget for Waste Acceptance increases from $591K to $1.2M. The increase supports the collecting and processing of FY 1998 commercial spent nuclear fuel inventory data, and the implementation of the provisions of the RW/EM Memorandum of Agreement on acceptance of DOE owned waste.**

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(Dollars in thousands)

PROGRAM INTEGRATION

I. Mission Supporting Goals and Objectives

QUALITY ASSURANCE

This Program element identifies and ensures implementation of federally mandated requirements for Nuclear Quality Assurance (QA) applicable to the CRWMS program activities related to radiological health and safety and waste isolation. It establishes and maintains a Quality Assurance Program formulated to ensure quality in activity planning and performance, thereby ensuring quality of the end-products. Documented compliance with these quality requirements establishes confidence in the effective implementation of the CRWMS program to support the execution and eventual licensing and/or certification of high-level nuclear waste operation activities.

This activity also provides for the implementation of QA Program requirements through review of technical and implementing documents, and development of such documents where appropriate.

PROGRAM MANAGEMENT

Systems Integration

The overall objective of the Systems Integration unit is to ensure development of an integrated waste management system, e.g., that the various components of the waste management system such as transportation services procurement activities and repository and waste package design activities, are integrated into a single system that meets mission requirements and is safe, efficient, reliable, and cost-effective. This element coordinates, interprets, and baselines technical requirements of the total system; evaluates and defines criteria for acceptance of other waste forms for disposal; leads OCRWM/Environmental Management (EM) interface and steering group activities and conducts reviews and analyses on identified issues; maintains current descriptions of the system, its components, and interfaces; enhances communication among parties responsible for individual system components and functions to ensure smooth flow at interfaces; develops and maintains a capability to fully assess alternative concepts; conducts systems studies, to ensure that proposed changes to all integrated waste management can be considered with an understanding of the interactions of the various system components; recommends improvements and supports development of equipment and processes having the potential to improve the system.

Regulatory Integration

The mission of the Regulatory Integration unit is to ensure that the activities leading to the final waste management system, including other DOE nuclear materials, are consistent with the regulatory guidance provided by the governing authorities. The approach to accomplishing this mission is to conduct regulatory reviews, and continue interactions with the Nuclear Regulatory Commission (NRC) to discuss technical and management issues and to resolve licensing issues. These activities are critical to the success of the overall program schedule as they directly impact the NRC licensing process for OCRWM activities and facilities.

Planning

This element supports the Director's program planning requirements by integrating policy direction received from the Administration, Congress, or the Office of the Secretary into an overall strategy and provides program planning documentation. These documents are used as guidance to efficiently and effectively integrate and implement policy direction into the OCRWM's activities. This element provides funding for responses to program inquiries, development of strategic planning documents, interface requirements with external program oversight parties and liaison activities with other related offices and programs within the Department.

International Waste

This activity interacts with other nations and international organization efforts to dispose of spent nuclear fuel and high-level waste. This role keeps OCRWM abreast of international developments and new ideas, and affords the opportunity to influence international opinion and direction on strategies for world-wide disposal of spent nuclear fuel and high-level waste.

Program Management

The key components of this element are business and management center planning, formulating and executing budgets and annual work plans, and establishing Program- and project-level cost, schedule, and technical baselines. Program Management provides the basis for: determining, prioritizing, and allocating Program resources; defining, costing, and executing work scope and schedules; and monitoring, analyzing, and improving Program performance.

HUMAN RESOURCES AND ADMINISTRATION

Human Resources Development

The activity supports the quality assurance training, personnel qualifications and records activities at Headquarters. Additionally, the activity assists in the maintenance and improvement of personnel job related skills and capabilities.

Audits, Education and Information

This element encompasses diverse activities that support OCRWM's mission, including: developing and submitting an Annual Report to Congress; developing and submitting OCRWM's financial statements to the Department's Chief Financial Officer; developing and submitting OCRWM's Annual Assurance Memorandum to the Secretary; and developing and submitting a formal Departmental response to recommendations in GAO audit reports. Information and education activities conducted by the National Information Center assist in building customer/stakeholder/public confidence in and support for the Program. OCRWM's Historically Black Colleges and Universities and Radioactive Waste Management Graduate Fellowship Programs support the Department's compliance with Executive Order 12677, the Secretary's science education initiative, and OCRWM's future need for a diversified workforce with highly specialized scientific and technical training.

Information Management

This activity encompasses the strategic application of information technologies to support the accomplishment of OCRWM's mission by providing integrated information systems, solutions and services that enhance the productivity of OCRWM's human resources, drive process improvement efforts, reduce overall Program costs, and support Departmental strategic realignment initiatives. Information management activities include the design and development of information systems to support the management and disposal of the Nation's spent nuclear fuel and high-level radioactive waste; providing a reliable infrastructure for effective and timely access to, and communication of, information; ensuring integration and integrity of technical, regulatory, management, and financial information.

Contract Business Management

This activity provides the administrative and operating expenses for the OCRWM technical support services contract at Headquarters. Additionally this activity provides program-wide contact management support.

II. Funding Schedule:

Program Activity	FY 1996	FY 1997	FY 1998	$ Change	% Change	FY 1999	FY 2000
PROGRAM INTEGRATION							
QUALITY ASSURANCE	5,147	1,710	1,710	0	0%	1,710	1,710
PROGRAM MANAGEMENT:							
Systems Integration	2,222	1,788	1,788	0	0%	1,788	1,788
Regulatory Integration	981	853	853	0	0%	853	853
Planning	1,800	1,600	1,600	0	0%	1,600	1,600
International	0	267	267	0	0%	267	267
Program Management	2,455	1,653	1,653	0	0%	1,653	1,653
Total Program Management	7,458	6,161	6,161	0	0%	6,161	6,161
HUMAN RESOURCES & ADMIN:							
Human Resources Development	250	190	190	0	0%	250	250
Audits, Education & Information	957	1,310	1,310	0	0%	1,080	1,080
Information Management	6,532	6,900	6,900	0	0%	6,836	6,836
Contract Business Management	1,761	1,530	1,530	0	0%	1,700	1,700
Total Human Resources & Admin	9,500	9,930	9,930	0	0%	9,866	9,866
TOTAL PROGRAM INTEGRATION	22,105	17,801	17,801	0	0%	17,737	17,737

III. Performance Summary

FY 1996 Accomplishments:

QUALITY ASSURANCE (FY 1996): **FY 1996 $5,147**

- **Supported increased activity (science and construction) in Exploratory Studies Facility (ESF), repository Advanced Conceptual Design (ACD), and the Geologic Repository Operations Area (GROA).**
- **Maintained QA Program document (QARD); made changes as needed based on program requirements.**
- **Supported DOE Office of Environmental Management (EM) activities at Savannah River and West Valley.**

- **Conducted audits, surveillances, and reviews as required by NRC regulations; supported revision(s) to technical baseline (reviews and overviews); continued consolidation of Program QA suppliers; and completed transition of QA organizations into the M&O.**

- **Issued Program-wide root cause analysis procedure.**

- **Supported WAST development of Unified Database; supported WAST draft acquisition activities for procurement of a full service transportation contractor; and supported WAST contingency planning and studies for a generic ISF.**

PROGRAM MANAGEMENT

Systems Integration (FY 1996) **FY 1996**
$2,222

- **Provided program-level systems engineering and integration support for the OCRWM program and on-going Yucca Mountain site characterization, Waste Package and Repository Design activities, and the Waste Acceptance, Transportation and Interim Storage efforts and private initiatives affecting OCRWM. (FY 1996 - FY 2000)**

- **Updated Program-level technical baseline to provide streamlined requirements documents which are easily maintained and revised.**

- **Provided systems engineering guidance and top-level requirements applicable to DOE SNF, and maintained and communicated requirements for the design of repository, surface facilities and waste packages, and storage and transportation systems. Ensured that requirements are consistent with current approved Program and responsive to project-level design needs. (FY 1996 - FY 2000)**

- **Developed, communicated and maintained criteria for acceptance of DOE spent nuclear fuel and other wastes for disposal in the CRWMS. (FY 1996 - FY 2000)**

- **Ensured that the interface requirements between the Mined Geologic Disposal System (MGDS) and the WAST project were adequately addressed and managed. Established key interfaces between the CRWMS and purchasers, producers and custodians. (FY 1996 - FY 2000)**

- **Supported the evaluation of alternative system design proposals. (FY 1996-FY 2000)**

- **As site characterization, repository design activities and transportation and interim storage efforts progress, incorporated latest concepts into system operation models, conducted system studies to evaluate impact of repository design and operational concepts on the overall CRWMS, and assessed system cost tradeoffs, waste logistics, and storage options. (FY 1996 - FY 2000)**

- **Continued to integrate, update and maintain the program Baseline Management Plans and procedures, supported the Program Change Control Board, and supported audits and verifications of baseline management implementation. (FY 1996 - FY 2000)**

- **Completed development of the OCRWM-wide Configuration Information System and initiated operation. (FY 1996 - FY 2000)**

Regulatory Integration (FY 1996): **FY 1996**

$ 981

- **Coordinated and participated in interactions with the Nuclear Regulatory Commission and its staff to address management and technical issues related to the repository program, interim storage and transportation of spent fuel. (FY 1996 - FY 2000)**

- **Coordinated and integrated program environmental, safety, and health activities to ensure compliance with departmental directives and policies. (FY 1996 - FY 2000)**

- **Provided regulatory assessments of storage and disposal considerations for other waste forms as proposed by other Departmental offices. (FY 1996 - FY 2000)**

- **Provided policy guidance and regulatory support to the Yucca Mountain Site Characterization Office in the definition, planning, and execution of the revised geologic disposal program. (FY 1996 - FY 1997)**

Planning (FY 1996): **FY 1996**

$1,800

- **Prepared Director's and Deputy Director's briefing materials and issued papers for Administration and Congressional testimonies. (FY 1996 - FY 2000)**

- **Responded to Administrative and Congressional inquiries regarding program status, policies, and direction. (FY 1996 - FY 2000)**

- **Provided liaisons with the Nuclear Waste Technical Review Board to address and resolve technical issues associated with program activities responding to Congressional direction to refocus the program.**

International Waste (FY 1996): **FY 1996**

$ 0

- **Closed out technical program agreements with Canada, Sweden and Switzerland due to delayed repository site characterization activities and funding restrictions.**

Program Management (FY 1996): **FY 1996**
$2,455

- **Implemented the Strategic System concept whereby the program is managed as a single system including two projects and a program integration element.**

- **Completed the draft integrated management policy document which will improve program and project management system design and implementing procedures including redefining management responsibilities, baseline change authority thresholds, cost estimating methods, and streamlining the management system document hierarchy.**

- **Updated program and project cost and schedule baselines, schedule networks, and bases of estimates. (FY 1996 - FY 2000)**

- **Supported implementation of improved departmental management policies. (FY 1996 - FY 2000)**

HUMAN RESOURCES AND ADMINISTRATION

Human Resources Development (FY 1996): **FY 1996**
$ 250

- **Developed OCRWM-wide Annual Training Plan.**

- **Assisted in the creation of a new OCRWM-wide training course on QA corrective action.**

- **Assisted in the implementation of Lead Auditor Training to OCRWM support organizations.**

- **Authored and reviewed various Headquarters and Yucca Mountain Project procedures in the areas of training, personnel qualifications and the maintenance/control of privileged records.**

- **Drafted Quality Assurance procedures pertaining to training and personnel qualifications which will be used OCRWM-wide.**

- **Conducted an in-depth review of all System 28 training records for Headquarters Federal and contractor personnel for the purpose of identifying deficiencies.**

Audits, Education and Information (FY 1996): **FY 1996**
$ 957

- **Developed OCRWM's Annual Report to Congress on FY 1995 activities and expenditures.**

- **Developed and submitted OCRWM's input to the Secretary's Performance Report for FY 1994/1995.**

- **Developed and submitted audited FY 1995 Nuclear Waste Fund and Defense Nuclear Waste Disposal financial statements to the Chief Financial Officer for transmittal to OMB.**

- **Developed and submitted OCRWM's FY 1995 Annual Assurance Memorandum required by the Federal Managers' Financial Integrity Act to the Secretary for incorporation into the Secretary's report to the President.**

- **Managed the NWF investment portfolio, which outperformed the intermediate Treasury Bond Fund index.**

- **Maintained the OCRWM Home Page, which was accessed approximately 10,000 times per week, and the Digital Media Database; responded to approximately 70 public inquiries per month; and developed the Technical Publications Database which provides access, via the OCRWM Home Page, to abstracts of recent OCRWM technical publications.**

- **Complied with Executive Order 12677 by conducting an HBCU Undergraduate Scholarship Program that supports 10 academically superior HBCU students.**

- **Conducted an OCRWM Radioactive Waste Management Graduate Fellowship Program that supported 12 academically gifted graduate students pursuing advanced degrees in waste management-related fields.**

- **Initiated FY 1996 annual audit of NWF.**

- **Initiated development of Director's FY 1996 Annual Assurance Memorandum to the Secretary.**

Information Management (FY 1996)	**FY 1996**
	$6,532

- **Conducted IM strategic, multi-year, and short-range planning; developed the first integrated OCRWM IM Multiyear Program Plan (MYPP); and initiated integrated IM budget planning.**

- **Developed performance assessment materials in preparation for implementation of the IM Performance Assessment and Improvement Program and conducted an assessment of records management performance at Headquarters as a mission-critical area.**

- **Continued development and implementation of an OCRWM information architecture to provide the foundation for the definition, organization, development, maintenance, and management of, and access to, all OCRWM data, records, and information systems.**

- **In support of the Department's objective of sharing information and information systems across the Federal**

Government, provided Correspondence Tracking System demonstrations and/or software to several Departmental organizations, as well as the White House Office of Science and Technology Policy, Environmental Protection Agency (EPA), Internal Revenue Service (IRS), and NRC.

- **Conducted the following ongoing activities:**
  - **Supported almost 500 users at 3 separate locations with computer hardware/software, calendaring, electronic messaging, telecommunications, training, Help Desk, and records management services at OCRWM HQ and provided program-wide videoconferencing and data communications.**
  - **Responded to over 700 Help Desk inquiries per month;**
  - **Maintained an E-mail system that processes over 64,000 messages per month;**
  - **Trained approximately 25 users per month;**
  - **Provided over 95 hours of videoconferencing per month;**
  - **Processed over 900 records per month.**

Contract Business Management (FY 1996): **FY 1996**
$1,761

- **Provided essential senior level advisory support on streamlining front office work processes and work flow.**
- **Provided Headquarters technical support services contractor operating and administrative expenses.**
- **Provided Program wide contract management support.**

FY 1997 Planned Accomplishments:

QUALITY ASSURANCE (FY 1997): **FY 1997**
$1,710

- **Support continued revision(s) to Technical Baseline and the continuation of DOE/EM hot functional runs for acceptance of defense vitrified waste and DOE/EM qualification of Spent Fuel Site QA Programs.**
- **Continue to conduct audits, surveillance, and reviews as required by NRC regulations; and coordinate performance of the QAMA process.**
- **Support ongoing activity in the Yucca Mountain Site Characterization effort.**
- **Support WAST Program element non-site specific design and engineering for an ISF and issuance of draft RFP for Transportation, Storage Module, and Waste Acceptance services.**

PROGRAM MANAGEMENT

Systems Integration (FY 1997): **FY 1997**
$1,788

- **See FY 1996 activity description.**

Regulatory Integration (FY 1997): **FY 1997**
$ 853

- **See FY 1996 activity description.**

Planning (FY 1997): **FY 1997**
$1,600

- **Continue to provide liaison with the Nuclear Waste Technical Review Board to address and resolve technical issues associated with site suitability activities. (FY 1997 - FY 2000)**

- **See FY 1996 activity description.**

International Waste (FY 1997): **FY 1997**
$ 267

- **Reestablish necessary cooperative international agreements with regard to geologic disposal studies to support the Program Plan strategy and milestones for site viability and licensing.**

Program Management (FY 1997): **FY 1997**
$1,653

- **Complete FY 1997 Program Life Cycle Cost Estimate.**

- **Continue to improve program and project management systems. (FY 1997 - FY 2000)**

- **Finalize the integrated management policy document, and implement new policies accordingly.**

- **See FY 1996 activity description.**

HUMAN RESOURCES AND ADMINISTRATION

Human Resources Development (FY 1997): **FY 1997**
$ 190

- **Update course outlines, instruction guides and lesson plans for quality assurance training.**

- **Conduct essential quality assurance training.**

- **Maintain quality assurance training tracking system.**

- **Maintain Quality Assurance training materials for the latest revision of the Quality Assurance procedures.**

- **Conduct a study into the use of on-line computer-based training for Quality Assurance subjects.**

- **Implement the OCRWM-wide Quality Assurance training and personnel qualifications procedures.**
- **Conduct a study on process improvement in the areas of training readiness, personnel qualifications, and certification.**
- **Establish and maintain Quality Assurance training records and conduct records reviews.**
- **Support maintenance and expansion of staff capabilities.**

Audits, Education and Information (FY 1997): **FY 1997**
$1,310

- **Develop and submit OCRWM's Annual Report on FY 1996 activities and expenditures.**
- **Develop and submit OCRWM's section of Secretary's FY 1996 Performance Report.**
- **Develop and submit audited FY 1996 NWF and Defense Nuclear Waste Disposal financial statements to the Chief Financial Officer for transmittal to OMB.**
- **Manage the NWF investment portfolio.**
- **Maintain the OCRWM Home Page.**
- **Maintain support for the Technical Publications Database.**
- **Maintain support for semiannual publication of "The OCRWM "Enterprise" newsletter.**

Information Management (FY 1997) **FY 1997**
$6,900

- **Optimize Headquarters telecommunications; deploy Metropolitan Area Network.**
- **Initiate consolidation of LAN operations and initiate WAN architecture optimization.**
- **Continue integrated strategic, multi-year, and short-range planning.**
- **Continue technical support for the OCRWM Home Page and Technical Publications Database.**
- **Provide essential computer-related training and Help Desk support.**
- **Provide videoconferencing services.**
- **Maintain OCRWM information architecture development and IM performance assessment and improvement program in the planning stage.**

Contract Business Management (FY 1997): **FY 1997**
$1,530

- **Provide Headquarters technical support services contractor operating and administrative expenses.**
- **Provided Program wide contract management support.**

FY 1998 Planned Accomplishments:

QUALITY ASSURANCE (FY 1998): **FY 1998**
$1,710

- **Continue support to WAST Program element procurement activities for Transportation, Storage Module, and Waste Acceptance services**
- **Continue to support system integration, engineering activities; and continue to support EM vitrification and DOE-owned spent fuel activities.**
- **Coordinate performance of QAMA process; and continue to conduct audits, surveillance, and reviews of quality affecting activities.**
- **Continue to support Yucca Mountain program element site characterization effort.**

PROGRAM MANAGEMENT

Systems Integration (FY 1998): **FY 1998**
$1,788

- **Complete FY 1998 Total System Life Cycle Cost Report and Fee Adequacy Analysis.**
- **See FY 1996 activity description.**

Regulatory Integration (FY 1998): **FY 1998**
$ 853

- **See FY 1996 activity description.**

Planning (FY 1998): **FY 1998**
$1,600

- **See FY 1996 activity description.**

International Waste (FY 1998): **FY 1998**
$ 267

- **Maintain necessary cooperative international agreements with regard to geologic disposal studies to support the Program Plan strategy and milestones for site viability and licensing. (FY 1998 - FY 2000)**

Program Management (FY 1998): **FY 1998**
$1,653

- **Complete FY 1997/98 Fee Adequacy Analysis and publish report.**
- **Develop interim update to Total System Life Cycle Cost (TSLCC) estimate.**
- **Consolidate support services contractors.**
- **See FY 1996 and FY 1997 activity descriptions.**

HUMAN RESOURCES AND ADMINISTRATION

Human Resources Development (FY 1998): **FY 1998**
$ 190

- **Update course outlines, instruction guides and lesson plans for quality assurance training. (This activity planned through FY 2000)**
- **Conduct essential quality assurance training. (This activity planned through FY 2000)**
- **Maintain quality assurance training tracking system. (This activity planned through FY 2000)**
- **Continue effort to maintain Quality Assurance training materials to the latest revision of the Quality Assurance procedures. (This activity planned through FY 2000)**
- **Establish and maintain Quality Assurance training records and conduct records reviews. (This activity planned through FY 2000)**

Audits, Education and Information (FY 1998): **FY 1998**
$1,310

- **Develop and submit OCRWM's Annual Report on FY 1997 activities and expenditures (continues annually).**
- **Develop and submit OCRWM's section of Secretary's FY 1997 Performance Report (continues annually).**
- **Develop and submit audited FY 1997 NWF and Defense Nuclear Waste Disposal financial statements to the Chief Financial Officer for transmittal to OMB (continues annually).**
- **Manage the NWF investment portfolio (continues annually).**
- **Maintain the OCRWM Home Page (continues annually).**

- **Maintain support for the Technical Publications Database (continues annually).**

- **Maintain support for semiannual publication of "The OCRWM Enterprise".**

Information Management (FY 1998) **FY 1998**
$6,900

- **Complete records/image system enhancements.**

- **Complete optimization of OCRWM WAN architecture.**

- **Conduct integrated strategic, multi-year, and short-range planning.**

- **Provide technical support to the OCRWM Home Page and Technical Publications Database.**

- **Provide essential LAN operations support.**

- **Maintain Performance Assessment and Improvement Program in the planning stage.**

- **Provide essential user support services, computer-related training, Help Desk support and records processing.**

- **Maintain selected maintenance agreements.**

Contract Business Management (FY 1998): **FY 1998**
$1,530

- **Provide Headquarters technical support services contractor operating and administrative expenses.**

- **Provide Program wide contract management support.**

FY 1999 Planned Accomplishments:

QUALITY ASSURANCE (FY 1999): **FY 1999**
$1,710

- **Support WAST Program Element activities including: interim storage site investigation activities, Phase I facility design, and Phase I license application activities.**

- **Continue to support system integration, engineering activities; and continue to support EM Vitrification and DOE-owned spent fuel activities.**

- **Coordinate performance of QAMA process; and continue to conduct audits, surveillance, and reviews of quality**

affecting activities.

- Continue to support Yucca Mountain program element site characterization efforts.

- Support WAST Program Element award of Phase A contract(s) for Transportation, Storage Module, and Waste Acceptance services.

PROGRAM MANAGEMENT

Systems Integration (FY 1999): **FY 1999**
$1,788

- See FY 1996 activity description.

Regulatory Integration (FY 1999): **FY 1999**
$ 853

- Provide technical and regulatory support for the resolution of regulatory issues associated with a national transportation program that includes a substantial number of spent nuclear fuel shipments. (FY 1999 - FY 2000)

- See FY 1996 activity description.

Planning (FY 1999): **FY 1999**
$1,600

- See FY 1996 activity description.

International Waste (FY 1999): **FY 1999**
$ 267

- See FY 1998 activity description.

Program Management (FY 1999): **FY 1999**
$1,653

- Complete FY 1999 TSLCC Report; and conduct FY 1999 Fee Adequacy Analysis.

- See FY 1996 and FY 1997 activity descriptions.

HUMAN AND RESOURCES AND ADMINISTRATION

Human Resources Development (FY 1999): **FY 1999**
$ 250

- **See FY 1998 activity descriptions.**

Audits, Education and Information (FY 1999): **FY 1999**
$1,080

- **Maintain essential services and operations.**

Information Management (FY 1999): **FY 1999**
$6,836

- **Maintain essential services and operations.**

Contract Business Management (FY 1999): **FY 1999**
$1,700

- **Provide Headquarters technical support services contractor operating and administrative expenses.**

- **Provide Program wide contract management support.**

FY 2000 Planned Accomplishments:

QUALITY ASSURANCE (FY 2000) **FY 2000**
$1,710

- **Support system integration/engineering activities; and Support EM vitrification and DOE-owned spent fuel activities.**

- **Coordinate performance of QAMA process; and conduct audits, surveillance, and reviews of quality affecting activities.**

- **Support Yucca Mountain program element site characterization and licensing efforts.**

- **Support WAST Program Element award of Phase B contract(s) for Transportation, Storage Module, and Waste Acceptance services.**

PROGRAM MANAGEMENT

Systems Integration (FY 2000): **FY 2000**
$1,788

- **Provide program integration input for the repository license application.**
- **Support interface development for a potential interim storage option. Support the integration of interim storage into the repository license application as applicable.**

- **See FY 1996 activity description.**

Regulatory Integration (FY 2000): **FY 2000**
$ 853

- **Provide support for the repository license application.**
- **Support NRC interactions for interim storage. Support the integration of interim storage into the repository license application as applicable.**
- **See FY 1996 activity description.**

Planning (FY 2000): **FY 2000**
$1,600

- **See FY 1996 activity description.**

International Waste (FY 2000): **FY 2000**
$ 267

- **Address potential added data needs and international interactions in support of YMP license application development and interactions with the NRC.**
- **See FY 1998 activity description.**

Program Management (FY 2000): **FY 2000**
$1,653

- **Begin the planning and integration effort required to develop schedules, cost estimates and baseline revisions for the next phase of the Program which will involve constructing an interim storage facility, establishing a national transportation program, acceptance of spent nuclear fuel, completion of the repository design, issuance of a repository license from the NRC and preparation for start of repository construction.**
- **Develop interim update for FY 2000 TSLCC estimate; and conduct FY 2000 Fee Adequacy Analysis.**
- **See FY 1996 and FY 1997 activity descriptions.**

HUMAN RESOURCES AND ADMINISTRATION

Human Resources Development (FY 2000): **FY 2000**
$ 250

- **See FY 1998 activity descriptions.**

Audits, Education and Information (FY 2000): **FY 2000**
$1,080

- **Maintain FY 1999 level of services and operations.**

Information Management (FY 2000): **FY 2000**
$6,836

- **Maintain FY 1999 level of services and operations.**

Contract Business Management (FY 2000): **FY 2000**
$1,700

- **Provide Headquarters technical support services contractor operating and administrative expenses.**

- **Provided Program wide contract management support.**

Explanation of Changes:

- **The FY 1998 funding requirement of $17.8 million for the total Program Integration program element is level with the FY 1997 funding requirement for this element. This represents a $4.3 million decrease from the FY 1996 funding level. This reduction was realized by reducing infrastructure costs. Savings from these reductions will be used to support waste acceptance and transportation activities in FY 1997 and 1998.**

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(Dollars in thousands)

PROGRAM DIRECTION

I. Mission Supporting Goals and Objectives

Program direction provides overall direction and administrative support for the Nuclear Waste Fund program to manage and dispose of the Nation's spent nuclear fuel and high-level radioactive waste.

Program direction has been grouped into four categories: 1) Salaries and Benefits; 2) Travel; 3)Other Related Expenses and 4) Working Capital Fund.

Salaries and Benefits

This element includes compensation for regular salaries and wages paid directly to civilian full-time permanent and other than full-time permanent employees, other payments that become a part of the employee's basic pay rate and other personnel compensation such as overtime, holiday pay and cash incentive awards. Benefits includes payments such as the employer's share of employee retirement, health and life insurance, accident compensation, Federal Insurance Contribution Act taxes, and Federal Retirement Thrift Savings Plan. Benefits also includes payments for former employees such as severance pay to employees involuntarily separated, and voluntary separation incentives. This includes payments to the unemployment fund, payments of nine percent of final basic pay to the civil service retirement fund for employees who took the early-out or buy-out authority, and payments to the Employees health benefits fund for annuitants.

Travel

This category provides funding for the transportation of Government employees, their per diem allowances while in authorized travel status, and other expenses incidental to travel that are to be paid by the Government either directly or by reimbursing the traveler.

Other Related Expenses

Other Related Expenses includes payments for rental space, telecommunications, utilities and miscellaneous charges, printing and reproduction, other services (tuition, employee development), operation and maintenance of equipment, purchases of goods and services for government accounts, supplies and materials and equipment.

Working Capital Fund

The Working Capital Fund includes payments for common administrative services at Headquarters.

II. Funding Schedule:

PROGRAM DIRECTION:	FY 1996 Original Appn	FY 1997 Budget Request	FY 1998 Budget Request	$ Change	% Change	FY 1999 Budget Request	FY 2000 Budget Request
Idaho:							
Salaries and Benefits	564	0	0	0	0%	0	0
Travel	12	0	0	0	0%	0	0
Other Related Expenses	92	0	0	0	0%	0	0
Total, Idaho	668	0	0	0	0%	0	0
FTE's	5	0	0	0	0%	0	0
Average FTE Cost	134	0	0	0	0%	0	0
Richland:							
Salaries and Benefits	73	75	78	3	4%	81	0
Travel	12	12	11	-1	-8%	11	0
Total, Richland	85	87	89	2	2%	92	0
FTE's	1	1	1	0	0%	1	0
Average FTE Cost	85	87	89	2	2%	92	0
Nevada:							
Salaries and Benefits	348	362	376	14	4%	391	407
Total, Nevada	348	362	376	14	4%	391	407
FTE's	4	4	4	0	0%	4	4
Average FTE Cost	87	90	94	4	4%	98	102
Oak Ridge:							
Salaries and Benefits	68	0	0	0	0%	0	0
Travel	2	0	0	0	0%	0	0
Other Related Expenses	1	0	0	0	0%	0	0
Total, Oak Ridge	71	0	0	0	0%	0	0
FTE's	1	0	0	0	0%	0	0
Average FTE Cost	71	0	0	0	0%	0	0

Note: The Average FTE cost at Idaho represents a fully loaded (salaries, benefits, rent, utilities, telecommunications, printing etc.) FTE cost for federal personnel at the Idaho Operations Office.

II. Funding Schedule:

PROGRAM DIRECTION:	FY 1996 Original Appn	FY 1997 Budget Request	FY 1998 Budget Request	$ Change	% Change	FY 1999 Budget Request	FY 2000 Budget Request
Other:							
Salaries and Benefits	1,064	1,240	1,212	-28	-2%	1,254	1,298
Travel	10	9	9	0	0%	8	8
Total, Other	1,074	1,249	1,221	-28	-2%	1,262	1,306
FTE's	16	18	16	-2	-11%	14	13
Average FTE Cost	67	69	76	7	10%	90	100

Note: The Other category includes salaries, benefits and travel for Department of Energy federal personnel that directly support the Office of Civilian Radioactive Waste Management (i.e. Human Resources, General Counsel, Policy, Departmental Administration, and the Chief Financial Office)

Headquarters-OCRWM:							
Washington D.C.							
Salaries and Benefits	10,270	11,500	10,642	-858	-7%	8,610	8,171
Travel	263	266	240	-26	-10%	250	260
Working Capital Fund	26	1,697	1,754	57	3%	1,824	1,897
Other Related Services	2,941	895	488	-407	-45%	1,310	1,527
Total, Washington D.C.	13,500	14,358	13,124	-1,234	-9%	11,994	11,855
FTE's	110	103	86	-17	-17%	74	71
Average FTE Cost	123	139	153	13	9%	162	167
Yucca Mtn Project Ofc Nevada							
Salaries and Benefits	9,470	9,904	9,997	93	1%	10,419	10,355
Travel	362	335	300	-35	-10%	312	324
Working Capital Fund	0	0	0	0	0%	0	0
Other Related Services	3,184	3,004	2,156	-848	-28%	2,792	3,016
Total, Yucca Mountain Proj. Ofc.	13,016	13,243	12,453	-790	-6%	13,523	13,695
FTE's	111	106	99	-7	-7%	97	94
Average FTE Cost	117	125	126	1	1%	139	146

Note: The Headquarters Average FTE cost represents a fully loaded (salaries, benefits, rent (in Washington D.C. as well as Las Vegas Nevada), utilities, telecommunications, printing etc.) FTE cost for federal personnel at the Yucca Mountain Site Characterization Office as well as the federal personnel in Washington D.C. The change in the average cost from one fiscal year to the next can be contributed to any costs associated with inflation and a reduction in force.

II. Funding Schedule:

PROGRAM DIRECTION:	FY 1996 Original Appn	FY 1997 Budget Request	FY 1998 Budget Request	$ Change	% Change	FY 1999 Budget Request	FY 2000 Budget Request
GRAND TOTAL PROGRAM DIRECTION							
Salaries and Benefits	21,857	23,081	22,305	-775	-3%	20,756	20,231
Travel	661	622	560	-62	-10%	581	592
Working Capital Fund	26	1,697	1,754	57	3%	1,824	1,897
Other Related Services	6,218	3,899	2,644	-1,255	-32%	4,102	4,543
Total, Program Direction	28,762	29,299	27,263	-2,035	-7%	27,263	27,263
FTE's	248	232	206	-26	-11%	190	182
Average FTE Cost	116	126	132	6	5%	143	150

III. Performance Summary

FY 1996 Planned Accomplishments	FY 1996
	$28,762

- Institute travel ceilings in accordance with Secretarial initiative to accomplish a 20 percent reduction in travel costs.
- Develop and implement an Employee Recognition Program.
- Further streamline the RW organization to meet Secretarial initiative to achieve a ll:l employee to supervisor ratio.
- Implement the consolidated quality assurance training and verification of personnel procedure throughout the Program.
- Continue to shift Full-Time Equivalents from Headquarters to the Yucca Mountain Site Characterization Office.
- Reduce support services contractor staff by 20 percent.
- Develop and implement a 360 degree performance appraisal process.
- Conceptualize and develop a Training Plan, which includes the Yucca Mountain Site Characterization Office.
- Conduct a quality management self-assessment at Headquarters and the Yucca Mountain Site Characterization Office.
- Continue to downsize the RW Federal staff to meet Secretarial initiatives.

FY 1997 Planned Accomplishments	FY 1997
	$29,299

- Continue to streamline the RW organization to meet Secretarial initiatives in the area of employee to supervisor ratios.
- Develop strategies to downsize organization to meet FTE levels dictated by the Secretary of Energy.
- Develop and implement Annual Training Plans and conduct Training Needs Surveys.
- Conduct yearly quality management self-assessments.

FY 1998 Planned Accomplishments	FY 1998
	$27,263

- Continue to streamline the RW organization to meet Secretarial initiatives in the area of employee to supervisor ratios.

- **Develop strategies to downsize organization to meet FTE levels dictated by the Secretary of Energy.**
- **Develop and implement Annual Training Plans and conduct Training Needs Surveys.**
- **Conduct yearly quality management self-assessments.**

	FY 1999
FY 1999 Planned Accomplishments	**$27,263**

- **Continue to streamline the RW organization to meet Secretarial initiatives in the area of employee to supervisor ratios.**
- **Develop strategies to downsize organization to meet FTE levels dictated by the Secretary of Energy.**
- **Develop and implement Annual Training Plans and conduct Training Needs Surveys.**
- **Conduct yearly quality management self-assessments.**

	FY 2000
FY 2000 Planned Accomplishments	**$27,263**

- **Continue to streamline the RW organization to meet Secretarial initiatives in the area of employee to supervisor ratios.**
- **Develop strategies to downsize organization to meet FTE levels dictated by the Secretary of Energy.**
- **Develop and implement Annual Training Plans and conduct Training Needs Surveys.**
- **Conduct yearly quality management self-assessments.**

IV. Explanation of Funding Changes FY 1997 to FY 1998

Program Direction decreases from $29.3M in FY 1997 to $27.3M in FY 1998. This decrease is due to the reduction of 26 FTE's in FY 1998.